

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Landra Porlos Examiner #: 81697 Date: _____
Art Unit: 1714 Phone Number 30 _____ Serial Number: 10/681,091
Mail Box and Bldg/Room Location: Rem 16D18 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: latex and its preparation

Inventors (please provide full names): _____

Earliest Priority Filing Date: _____

For Sequence Searches Only Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number..

STAFF USE ONLY

	Type of Search	Vendors and cost where applicable
Searcher: <u>291</u>	NA Sequence (#) _____	STN <u>\$ 981.14</u>
Searcher Phone #: _____	AA Sequence (#) _____	Dialog _____
Searcher Location: _____	Structure (#) _____	Questel/Orbit _____
Date Searcher Picked Up: _____	Bibliographic <input checked="" type="checkbox"/>	Dr.Link _____
Date Completed: <u>11/28/05</u>	Litigation _____	Lexis/Nexis _____
Searcher Prep & Review Time: <u>30</u>	Fulltext _____	Sequence Systems _____
Clerical Prep Time: <u>30</u>	Patent Family _____	WWW/Internet _____
Online Time: <u>225</u>	Other _____	Other (specify) _____



STIC Search Report

EIC 1700

STIC Database Tracking Number: 172431

TO: Sandra Poulos
Location: REM 10D18
Art Unit : 1714
November 28, 2005

Case Serial Number: 10/681091

From: Les Henderson
Location: EIC 1700
REM 4B28 / 4A30
Phone: 571-272-2538

Leslie.henderson@uspto.gov

Search Notes



STIC Search Results Feedback Form

EIC17000

Questions about the scope or the results of the search? Contact *the EIC searcher* or contact:

Kathleen Fuller, EIC 1700 Team Leader
571/272-2505 REMSEN 4B28

Voluntary Results Feedback Form

- I am an examiner in Workgroup: Example: 1713
- Relevant prior art **found**, search results used as follows:

- ☐ 102 rejection
- ☐ 103 rejection
- ☐ Cited as being of interest.
- ☐ Helped examiner better understand the invention.
- ☐ Helped examiner better understand the state of the art in their technology.

Types of relevant prior art found:

- ☐ Foreign Patent(s)
- ☐ Non-Patent Literature
(journal articles, conference proceedings, new product announcements etc.)

- Relevant prior art **not found**:

- ☐ Results verified the lack of relevant prior art (helped determine patentability).
- ☐ Results were not useful in determining patentability or understanding the invention.

Comments:

Drop off or send completed forms to EIC1700 REMSEN 4B28

Mellerson, Kendra

172431

From: "Sandra Poulos" [sandra.poulos@uspto.gov]
Sent: Wednesday, November 23, 2005 2:55 PM
To: STIC-EIC1700
Subject: Database Search Request

Requester:
Sandra Poulos (TC1700)
Art Unit:
1714
Employee Number:
81697
Office Location:
REM 10D18
Phone Number:
571-272-6428
Mailbox Number:

SCIENTIFIC REFERENCE BR
Sci & Tech Inf - Cnt

NOV 23 2005

Pat. & T.M. Office

Case serial number:
10/681091
Class / Subclass(es):
524/457
Earliest Priority Filing Date:
10/09/2002
Format preferred for results:
Paper
Search Topic Information:

Special Instructions and Other Comments:
Please search claims 7 and 17.



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Bib Data Sheet

CONFIRMATION NO. 8109

SERIAL NUMBER 10/681,091	FILING DATE 10/09/2003 RULE	CLASS 524	GROUP ART UNIT 1714	ATTORNEY DOCKET NO. 237714US0
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APPLICANTS

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** CONTINUING DATA *****

** FOREIGN APPLICATIONS *****

GERMANY 102 47 051.0 10/09/2002

IF REQUIRED, FOREIGN FILING LICENSE GRANTED

** 01/08/2004

Foreign Priority claimed 35 USC 119 (a-d) conditions met	<input type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> Met after Allowance	STATE OR COUNTRY GERMANY	SHEETS DRAWING 0	TOTAL CLAIMS 26	INDEPENDENT CLAIMS 2
Verified and Acknowledged	Examiner's Signature _____ Initials _____				

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 22314

TITLE

Latex and its preparation

FILING FEE RECEIVED	FEES: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:	<input type="checkbox"/> All Fees <input type="checkbox"/> 1.16 Fees (Filing) <input type="checkbox"/> 1.17 Fees (Processing Ext. of time)

878		<input type="checkbox"/> 1.18 Fees (Issue) <input type="checkbox"/> Other <input type="checkbox"/> Credit
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ABSTRACT

A latex having a reduced amount of 4-phenylcyclohexene is obtainable by reacting A) 30-90% by weight of at least one ethylenically unsaturated monomer; B) 70-10% by weight of a diene; C) 1-10% by weight of α,β -unsaturated carboxylic acids, carboxylic acid nitriles, carboxylic acid amides, or mixtures thereof; and D) an auxiliary, an additive or mixtures thereof; wherein a sum of A, B and C is 100% by weight. The reaction follows a gradient regime for components A and B. In the gradient regime, an amount added per unit time of one of components A or B continuously increases, while simultaneously an amount added per unit time continuously decreases for one of components A or B which does not undergo the continuous increase; with the proviso that a starting molar ratio of A to B is adjusted from a range of 0.15 - 0.95 or 1.05 - 6.66 through at least one discontinuous change in the amount added per unit time to a target molar ratio of A to B, in the range of 1.05 - 6.66 or 0.15 - 0.95, and thereafter the change in the amount added per unit time is made i) constantly for A and B, and/or ii) decreasingly for A and ascendingly for B, and/or iii) decreasingly for B and ascendingly for A, in any sequence, individually or in combination.

2007 0072 9-5

CLAIMS

1. A latex, obtainable by reacting
 - A) 30-90% by weight of at least one ethylenically unsaturated monomer;
 - B) 70-10% by weight of a diene;
 - 5 C) 1-10% by weight of α,β -unsaturated carboxylic acids, carboxylic acid nitriles, carboxylic acid amides, or mixtures thereof; and
 - D) at least one auxiliary, at least one additive or mixtures thereof;wherein a sum of A, B and C is 100% by weight;
wherein said reacting follows a gradient regime for components A and B;
10 wherein, in said gradient regime, an amount added per unit time of one of components A or B continuously increases, while simultaneously an amount added per unit time continuously decreases for one of components A or B which does not undergo the continuous increase;
with the proviso that a starting molar ratio of A to B is adjusted from a range of 0.15 -
15 0.95 or 1.05 - 6.66 through at least one discontinuous change in the amount added per unit time to a target molar ratio of A to B, in the range of 1.05 - 6.66 or 0.15 - 0.95, and thereafter the change in the amount added per unit time is made
 - i) constantly for A and B, and/or
 - ii) decreasingly for A and ascendingly for B, and/or
 - 20 iii) decreasingly for B and ascendingly for A,in any sequence, individually or in combination.
2. The latex as claimed in claim 1, wherein component A is selected from the group consisting of C_2 to C_{20} alkenes, functionalized vinyl compounds, C_5 to C_{20} alkadienes having isolated double bonds, C_5 to C_{20} alkatrienes having isolated double bonds, C_5 to C_{20} cycloolefins, vinyl-substituted aromatics, α,β -monoethylenically unsaturated carboxylic
25

acids, nitriles of α,β -monoethylenically unsaturated carboxylic acids, amides of α,β -monoethylenically unsaturated carboxylic acids, anhydrides of α,β -monoethylenically unsaturated carboxylic acids, C_1 to C_{20} alkyl esters of acrylic acid, C_1 to C_{20} alkyl esters of methacrylic acid, C_6 to C_{20} aryl esters of acrylic acid and C_6 to C_{20} aryl esters of methacrylic acid.

3. The latex as claimed in claim 2, wherein component A comprises vinylaromatics.

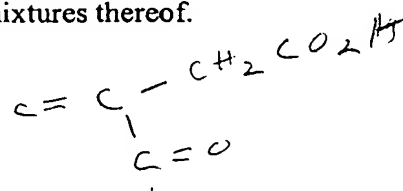
4. The latex as claimed in claim 3, wherein component A comprises styrene.

5. The latex as claimed in claim 1, wherein component B is selected from the group consisting of C_4 to C_{20} dienes having conjugated double bonds.

6. The latex as claimed in claim 1, wherein component B comprises butadiene.

7. The latex as claimed in claim 1, wherein component C is selected from the group consisting of C_3 to C_6 α,β -monoethylenically unsaturated monocarboxylic acids, C_3 to C_6 α,β -monoethylenically unsaturated dicarboxylic acids, esters of C_3 to C_6 α,β -monoethylenically unsaturated monocarboxylic acids with C_1 to C_{12} alkanols, esters of C_3 to C_6 α,β -monoethylenically unsaturated dicarboxylic acids with C_1 to C_{12} alkanols, amides of C_3 to C_6 α,β -monoethylenically unsaturated monocarboxylic acids, amides of C_3 to C_6 α,β -monoethylenically unsaturated dicarboxylic acids, nitriles of C_3 to C_6 α,β -monoethylenically unsaturated monocarboxylic acids, nitriles of C_3 to C_6 α,β -monoethylenically unsaturated dicarboxylic acids, anhydrides of C_3 to C_6 α,β -monoethylenically unsaturated monocarboxylic acids, and anhydrides of C_3 to C_6 α,β -monoethylenically unsaturated dicarboxylic acids.

8. The latex as claimed in claim 1, wherein component C comprises acrylic acid, acrylonitrile, acrylamide, methacrylic acid, itaconic acid or mixtures thereof.



9. The latex as claimed in claim 1, wherein at least one of components D is selected from the group consisting of surface-active substances, initiators, molecular weight regulators, pH regulators, complexing agents, and mixtures thereof.
10. The latex as claimed in claim 1, wherein before the beginning of said gradient regime a portion of components A and B is metered in with constant linearity.
11. The latex as claimed in claim 1, wherein, before said starting molar ratio of A to B or said target molar ratio of A to B is reached, the gradient regime operates without or with single or multiple reversal of a change in the amount added per unit time of A and B.
12. The latex as claimed in claim 1, wherein there are two, three or four discontinuous changes in the amount added per unit time.
13. The latex as claimed in claim 1, wherein said reacting takes place at a temperature of from 5 to 130°C; and
wherein said temperature is constant during said reacting; or
wherein said temperature varies during said reacting.
14. The latex as claimed in claim 1, wherein component C is run in with a constant and/or with a decreasing and/or an increasing change in the amount added per unit time and any desired combinations thereof and dependently or independently of the amount added per unit time of components A and B .
15. The latex as claimed in claim 1, wherein component D is run in with a constant and/or with a decreasing and/or an increasing change in the amount added per unit time and any desired combinations thereof and dependently or independently of the amount of components A and B added per unit time.
16. A process for preparing a latex, comprising:
reacting
A) 30-90% by weight of at least one ethylenically unsaturated monomer;

B) 70-10% by weight of a diene;

C) 1-10% by weight of α,β -unsaturated carboxylic acids, carboxylic acid nitriles, carboxylic acid amides, or mixtures thereof; and

D) at least one auxiliary, at least one additive or mixtures thereof;

5 wherein a sum of A, B and C is 100% by weight;

wherein said reacting follows a gradient regime for components A and B;

wherein, in said gradient regime, an amount added per unit time of one of components A or B continuously increases, while simultaneously an amount added per unit time continuously decreases for one of components A or B which does not undergo the continuous
10 increase;

with the proviso that a starting molar ratio of A to B is adjusted from a range of 0.15 - 0.95 or 1.05 - 6.66 through at least one discontinuous change in the amount added per unit time to a target molar ratio of A to B, in the range of 1.05 - 6.66 or 0.15 - 0.95, and thereafter the change in the amount added per unit time is made

- 15
- i) constantly for A and B, and/or
 - ii) decreasingly for A and ascendingly for B, and/or
 - iii) decreasingly for B and ascendingly for A,
- in any sequence, individually or in combination.

17. The process according to claim 16, wherein component A is selected from the
20 group consisting of C_2 to C_{20} alkenes, functionalized vinyl compounds, C_5 to C_{20} alkadienes having isolated double bonds, C_5 to C_{20} alkatrienes having isolated double bonds, C_5 to C_{20} cycloolefins, vinyl-substituted aromatics, α,β -monoethylenically unsaturated carboxylic acids, nitriles of α,β -monoethylenically unsaturated carboxylic acids, amides of α,β -monoethylenically unsaturated carboxylic acids, anhydrides of α,β -monoethylenically
25 unsaturated carboxylic acids, C_1 to C_{20} alkyl esters of acrylic acid, C_1 to C_{20} alkyl esters of

methacrylic acid, C₆ to C₂₀ aryl esters of acrylic acid and C₆ to C₂₀ aryl esters of methacrylic acid.

18. The process according to claim 16, wherein component A comprises vinylaromatics.

5 19. The process according to claim 16, wherein component A comprises styrene.

20. The process according to claim 16, wherein component B is selected from the group consisting of C₄ to C₂₀ dienes having conjugated double bonds.

21. The process according to claim 16, wherein component B comprises butadiene.

10 22. The process according to claim 16, wherein component C is selected from the group consisting of C₃ to C₆ α,β -monoethylenically unsaturated monocarboxylic acids, C₃ to C₆ α,β -monoethylenically unsaturated dicarboxylic acids, esters of C₃ to C₆ α,β -monoethylenically unsaturated monocarboxylic acids with C₁ to C₁₂ alkanols, esters of C₃ to C₆ α,β -monoethylenically unsaturated dicarboxylic acids with C₁ to C₁₂ alkanols, amides of C₃ to C₆ α,β -monoethylenically unsaturated monocarboxylic acids, amides of C₃ to C₆ α,β -monoethylenically unsaturated dicarboxylic acids, nitriles of C₃ to C₆ α,β -monoethylenically unsaturated monocarboxylic acids, nitriles of C₃ to C₆ α,β -monoethylenically unsaturated dicarboxylic acids, anhydrides of C₃ to C₆ α,β -monoethylenically unsaturated monocarboxylic acids, and anhydrides of C₃ to C₆ α,β -monoethylenically unsaturated dicarboxylic acids.

23. The process according to claim 16, wherein component C comprises acrylic acid, acrylonitrile, acrylamide, methacrylic acid, itaconic acid or mixtures thereof.

24. The process according to claim 16, wherein at least one of component D is selected from the group consisting of surface-active substances, initiators, molecular weight regulators, pH regulators, complexing agents, and mixtures thereof.

25. The process according to claim 16, wherein said reacting takes place at a
5 temperature of from 5 to 130°C.

26. An article coated with the latex according to claim 1.

=> d his ful

(FILE 'HOME' ENTERED AT 10:09:34 ON 28 NOV 2005)

FILE 'HCAPLUS' ENTERED AT 10:09:58 ON 28 NOV 2005

L1 E US20040072945/PN
1 SEA ABB=ON PLU=ON US20040072945/PN
D ALL
SEL RN

FILE 'REGISTRY' ENTERED AT 10:10:54 ON 28 NOV 2005

L2 1 SEA ABB=ON PLU=ON 114464-60-7/BI
D SCAN
L3 1 SEA ABB=ON PLU=ON 114464-60-7/RN
D SCAN

FILE 'LREGISTRY' ENTERED AT 10:24:33 ON 28 NOV 2005

L4 STR
L5 STR
L6 STR

FILE 'REGISTRY' ENTERED AT 10:28:34 ON 28 NOV 2005

L7 SCR 2043
L8 38 SEA SSS SAM L4 AND L5 AND L6 AND L7
E ACRYLONITRILE/CN
E ACRYLONITRILE/CN
L9 1 SEA ABB=ON PLU=ON ACRYLONITRILE/CN
D SCAN
D RN
E 107-13-1/RN
L10 1 SEA ABB=ON PLU=ON 107-13-1/RN
D SCAN
E ACRYLAMIDE/CN
L11 1 SEA ABB=ON PLU=ON ACRYLAMIDE/CN
D SCAN
E ITACONIC AICD/CN
E -25
E ITACONIC/CN
E ITACONIC ACID/CN
L12 1 SEA ABB=ON PLU=ON ITACONIC ACID/CN
D SCAN
D RN
E 97-65-4/RN
L13 1 SEA ABB=ON PLU=ON 97-65-4/RN
D SCAN
L14 1 SEA ABB=ON PLU=ON ACRYLIC ACID/CN
D SCAN
D RN
L15 1 SEA ABB=ON PLU=ON 79-10-7/RN
D SCAN
L16 1 SEA ABB=ON PLU=ON METHACRYLIC ACID/CN
D SCAN
D RN
L17 1 SEA ABB=ON PLU=ON 79-41-4/RN
D SCAN
D SCAN L11
D L11 RN
L18 1 SEA ABB=ON PLU=ON 79-06-1/RN
D SCAN

FILE 'LREGISTRY' ENTERED AT 10:44:06 ON 28 NOV 2005
D QUE STAT L6

L19 STR L6
D QUE STAT L4
D QUE STAT L5
D QUE STAT L6
D QUE STAT L19

FILE 'REGISTRY' ENTERED AT 10:49:44 ON 28 NOV 2005
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D QUE STAT

FILE 'LREGISTRY' ENTERED AT 11:10:02 ON 28 NOV 2005
L21 STR L19

FILE 'REGISTRY' ENTERED AT 11:11:54 ON 28 NOV 2005
L22 50 SEA SSS SAM L4 AND L5 AND L21 AND L7
D QUE STAT

FILE 'LREGISTRY' ENTERED AT 12:10:19 ON 28 NOV 2005
L23 STR L21

FILE 'REGISTRY' ENTERED AT 12:11:52 ON 28 NOV 2005
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L25 50 SEA SSS SAM L4 AND L5 AND L23 AND L7 AND L24
L26 8354 SEA SSS FUL L4 AND L5 AND L23 AND L7 AND L24
SAV L26 POU091/A

FILE 'LREGISTRY' ENTERED AT 12:16:48 ON 28 NOV 2005
L27 STR L4

FILE 'REGISTRY' ENTERED AT 12:18:19 ON 28 NOV 2005
L28 50 SEA SUB=L26 SSS SAM (L27 AND L5 AND L23)
L29 5043 SEA SUB=L26 SSS FUL (L27 AND L5 AND L23)
SAV L29 POU091A/A
E 107-13-1/CRN
L30 18545 SEA ABB=ON PLU=ON 107-13-1/CRN
E 79-10-7/CRN
L31 58027 SEA ABB=ON PLU=ON 79-10-7/CRN
E 79-06-1/CRN
L32 13864 SEA ABB=ON PLU=ON 79-06-1/CRN
E 79-41-4/CRN
L33 44757 SEA ABB=ON PLU=ON 79-41-4/CRN
E 97-65-4/CRN
L34 5511 SEA ABB=ON PLU=ON 97-65-4/CRN
E 106-99-0/CRN
L35 10015 SEA ABB=ON PLU=ON 106-99-0/CRN
E 100-42-5/CRN
L36 71546 SEA ABB=ON PLU=ON 100-42-5/CRN
L37 3042 SEA ABB=ON PLU=ON ((L30 OR L31 OR L32 OR L33 OR
L34)) AND L35 AND L36

FILE 'HCAPLUS' ENTERED AT 12:27:05 ON 28 NOV 2005
L38 34744 SEA ABB=ON PLU=ON L26
L39 31374 SEA ABB=ON PLU=ON L29
L40 27711 SEA ABB=ON PLU=ON L37
L41 464105 SEA ABB=ON PLU=ON LATEX? OR RUBBER? OR ELASTOMER?
L42 18304 SEA ABB=ON PLU=ON L41 AND L38

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E 113974-98-4/CRN
L43 5 SEA ABB=ON PLU=ON 113974-98-4/CRN
D SCAN

L44 2101 SEA ABB=ON PLU=ON L26 AND 3/NC
 L45 2247 SEA ABB=ON PLU=ON L26 AND 4/NC
 L46 724 SEA ABB=ON PLU=ON L29 AND 3/NC
 L47 1268 SEA ABB=ON PLU=ON L29 AND 4/NC
 L48 27 SEA ABB=ON PLU=ON L37 AND 3/NC
 L49 595 SEA ABB=ON PLU=ON L37 AND 4/NC
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 L50 1 SEA ABB=ON PLU=ON 114464-60-7/RN
 D SCAN

 FILE 'HCAPLUS' ENTERED AT 12:40:07 ON 28 NOV 2005
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 D SCAN
 L52 3 SEA ABB=ON PLU=ON L43
 D SCAN
 L53 30514 SEA ABB=ON PLU=ON L44
 L54 27642 SEA ABB=ON PLU=ON L46
 L55 24591 SEA ABB=ON PLU=ON L48
 L56 4674 SEA ABB=ON PLU=ON L45
 L57 3895 SEA ABB=ON PLU=ON L47
 L58 2954 SEA ABB=ON PLU=ON L49
 L59 33121 SEA ABB=ON PLU=ON (L53 OR L54 OR L55 OR L56 OR L57
 OR L58)
 L60 17113 SEA ABB=ON PLU=ON L41 AND L59
 E SURFACE ACTIVE/CT
 L61 52244 SEA ABB=ON PLU=ON SURFAC?(A)ACT? OR SURFACEACT?
 L62 78388 SEA ABB=ON PLU=ON INITIATOR?
 L63 7284 SEA ABB=ON PLU=ON (MOLECUL?(A)(WEIGHT? OR WT?) OR
 MW)(2A)(REGULAT? OR CONTROL?)
 L64 65193 SEA ABB=ON PLU=ON (PH OR ACID? OR BASIC? OR BASE OR
 BASES)(2A)(REGUL? OR CONTROL?)
 L65 17851 SEA ABB=ON PLU=ON COMPLEX?(A)AGENT?
 L66 218236 SEA ABB=ON PLU=ON (L61 OR L62 OR L63 OR L64 OR L65)
 L67 728 SEA ABB=ON PLU=ON L60 AND L66
 L68 98 SEA ABB=ON PLU=ON GRADIENT?(2A)REGIM?
 L69 0 SEA ABB=ON PLU=ON L68 AND L67
 L70 227427 SEA ABB=ON PLU=ON GRADIENT?
 L71 0 SEA ABB=ON PLU=ON L70 AND L67
 L72 17586 SEA ABB=ON PLU=ON COMPONENT?(3A)(INCREAS? OR
 DECREAS?)
 L73 0 SEA ABB=ON PLU=ON L72 AND L67
 L74 70532 SEA ABB=ON PLU=ON LATEX?
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 L77 3462 SEA ABB=ON PLU=ON L76 AND L74
 L78 0 SEA ABB=ON PLU=ON L77 AND L68
 L79 7 SEA ABB=ON PLU=ON L77 AND L70
 D L79 1-7 KWIC
 L80 1 SEA ABB=ON PLU=ON L59 AND L68
 D SCAN
 L81 59 SEA ABB=ON PLU=ON L59 AND L70
 D 1-5 KWIC
 L82 34 SEA ABB=ON PLU=ON L81 AND L41
 L83 8 SEA ABB=ON PLU=ON L82 AND L74
 L84 0 SEA ABB=ON PLU=ON L81 AND L66
 L85 2 SEA ABB=ON PLU=ON L77 AND L72
 L86 4154 SEA ABB=ON PLU=ON L59 AND (INCR? OR DECR? OR
 CONTINU?)
 L87 1411 SEA ABB=ON PLU=ON L86 AND (TIME? OR SEC# OR SECOND?
 OR MIN# OR MINUTE# OR HOUR# OR HR#)
 L88 1073 SEA ABB=ON PLU=ON L87 AND (TEMP# OR TEMPERATURE# OR
 HEAT? OR THERMAL? OR DEG# OR DEGREE# OR CENTIGRAD? OR

CELSIUS? OR FAHRENHEIT? OR KELVIN? OR COOL? OR FREEZ?
 OR FROZ? OR CHILL?)
 L89 5 SEA ABB=ON PLU=ON L88 AND L70
 L90 29 SEA ABB=ON PLU=ON L81 AND (INCR? OR DECR? OR CONT?)
 L91 15 SEA ABB=ON PLU=ON L81 AND (TIME? OR SEC# OR SECOND?
 OR MIN# OR MINUTE# OR HOUR# OR HR#)
 L92 37 SEA ABB=ON PLU=ON L81 AND (TEMP# OR TEMPERATURE# OR
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 CELSIUS? OR FAHRENHEIT? OR KELVIN? OR COOL? OR FREEZ?
 OR FROZ? OR CHILL?)
 L93 7250 SEA ABB=ON PLU=ON COAT? (2A)ARTICL?
 L94 0 SEA ABB=ON PLU=ON L81 AND L93
 L95 0 SEA ABB=ON PLU=ON L75 AND L93
 L96 42 SEA ABB=ON PLU=ON L75 AND COAT?
 D 1-5 KWIC
 L97 61 SEA ABB=ON PLU=ON (L79 OR L80 OR L81 OR L82 OR L83)
 OR L85
 L98 46 SEA ABB=ON PLU=ON (L89 OR L90 OR L91 OR L92)
 L99 61 SEA ABB=ON PLU=ON L97 OR L98
 L100 0 SEA ABB=ON PLU=ON L96 AND L99
 L101 5 SEA ABB=ON PLU=ON L99 AND COAT?
 L102 61 SEA ABB=ON PLU=ON L99 OR L101
 L103 3 SEA ABB=ON PLU=ON L51 OR L52
 L104 63 SEA ABB=ON PLU=ON L103 OR L102
 L105 0 SEA ABB=ON PLU=ON L104 AND (MOLEC? (A) (WEIGHT? OR
 WT?) OR MW)
 L106 8 SEA ABB=ON PLU=ON L104 AND (WEIGHT? OR WT? OR
 PERCENT? OR PER (W)CENT? OR PCT?)
 L107 9 SEA ABB=ON PLU=ON L104 AND COMPONENT?
 L108 63 SEA ABB=ON PLU=ON L104 OR L106 OR L107
 L109 2 SEA ABB=ON PLU=ON L108 AND MOLAR?
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 L112 4 SEA ABB=ON PLU=ON L110 OR L111
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 L114 60 SEA ABB=ON PLU=ON L113 NOT L103
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 E COATINGS MAT/CT
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 L116 123267 SEA ABB=ON PLU=ON "COATING PROCESS"/CT
 E COATING MATERIALS/CT
 L117 268501 SEA ABB=ON PLU=ON COATING MATERIALS/CT
 L118 2 SEA ABB=ON PLU=ON L113 AND ((L115 OR L116 OR L117))
 L119 63 SEA ABB=ON PLU=ON L118 OR L113
 L120 60 SEA ABB=ON PLU=ON L119 NOT L103
 L121 35 SEA ABB=ON PLU=ON L120 AND L41
 L122 25 SEA ABB=ON PLU=ON L120 NOT L121
 D SCAN

=> => => d que stat l103

L43 5 SEA FILE=REGISTRY ABB=ON PLU=ON 113974-98-4/CRN
 L50 1 SEA FILE=REGISTRY ABB=ON PLU=ON 114464-60-7/RN
 L51 3 SEA FILE=HCAPLUS ABB=ON PLU=ON L50
 L52 3 SEA FILE=HCAPLUS ABB=ON PLU=ON L43
 L103 3 SEA FILE=HCAPLUS ABB=ON PLU=ON L51 OR L52

=> d 1103 1-3 ibib abs hitstr hitind

L103 ANSWER 1 OF 3 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2004:305174 HCAPLUS

DOCUMENT NUMBER: 140:304682

TITLE: Process for preparing latex by reaction in gradient regime

INVENTOR(S): Schwenzfeier, Hans-Peter; Hahn, Sabine; Chen, Jinqiu; Wieboldt, Jens

PATENT ASSIGNEE(S): Polymer Latex G.m.b.H. & Co. K.-G., Germany

SOURCE: Eur. Pat. Appl., 17 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1408059	A1	20040414	EP 2003-22346	2003 1004
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
DE 10247051	A1	20040422	DE 2002-10247051	2002 1009
CA 2444428	AA	20040409	CA 2003-2444428	2003 1007
JP 2004131734	A2	20040430	JP 2003-348245	2003 1007
BR 2003004732	A	20040831	BR 2003-4732	2003 1007
CN 1496998	A	20040519	CN 2003-10102801	2003 1008
ZA 2003007846	A	20040706	ZA 2003-7846	2003 1008
US 2004072945	A1	20040415	US 2003-681091	2003 1009
PRIORITY APPLN. INFO.:			DE 2002-10247051	A 2002 1009

AB The process for preparing a latex having a reduced amount of 4-phenylcyclohexene comprises reacting (A) 30-90% ≥ 1 ethylenically unsatd. monomer (e.g., styrene); (B) 70-10% diene (e.g., butadiene); (C) 1-10% α, β -unsatd. carboxylic acids, carboxylic acid nitriles and/or carboxylic acid amides (e.g., acrylic acid); and (D) an auxiliary and/or an additive; wherein the sum of A, B and C is 100%. The reaction follows a gradient regime for components A and B. In the gradient regime, an amount added per unit time of one of components A or B continuously increases, while simultaneously an amount added per

unit time continuously decreases for one of components A or B which does not undergo the continuous increase; with the proviso that a starting molar ratio of A to B is adjusted to 0.15-0.95 or 1.05-6.66 through ≥ 1 discontinuous change in the amount added per unit time to a target molar ratio of A to B, in the range of 1.05-6.66 or 0.15-0.95, and thereafter the change in the amount added per unit time is made (i) constantly for A and B, and/or (ii) decreasingly for A and ascendingly for B, and/or (iii) decreasingly for B and ascendingly for A, in any sequence, individually or in combination.

IT 114464-60-7P, Acrylic acid-butadiene-styrene graft copolymer sodium salt

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(process for preparing latex by reaction in gradient regime)

RN 114464-60-7 HCAPLUS

CN 2-Propenoic acid, polymer with 1,3-butadiene and ethenylbenzene, sodium salt, graft (9CI) (CA INDEX NAME)

CM 1

CRN 113974-98-4

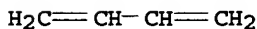
CMF (C8 H8 . C4 H6 . C3 H4 O2)x

CCI PMS

CM 2

CRN 106-99-0

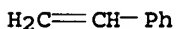
CMF C4 H6



CM 3

CRN 100-42-5

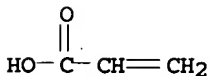
CMF C8 H8



CM 4

CRN 79-10-7

CMF C3 H4 O2



IC ICM C08F257-02

ICS C08F285-00; C08F291-00; C08L055-02; C08F002-22

CC 37-3 (Plastics Manufacture and Processing)

Section cross-reference(s): 42

IT 114464-60-7P, Acrylic acid-butadiene-styrene graft copolymer sodium salt

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (process for preparing latex by reaction in gradient regime)
 REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE
 FOR THIS RECORD. ALL CITATIONS AVAILABLE
 IN THE RE FORMAT

L103 ANSWER 2 OF 3 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2001:419395 HCAPLUS

DOCUMENT NUMBER: 136:103054

TITLE: On the flammability of the
 electron-beam-induced grafting of ABS and SBS
 copolymers, studied by LOI/CONE/XPS

AUTHOR(S): Wang, Jianqi; Wu, Shaoli

CORPORATE SOURCE: Beijing Institute of Technology School of
 Chemical Engineering & Materials Science,
 National Laboratory of Flame Retardant
 Materials, Beijing, 100081, Peop. Rep. China

SOURCE: Journal of Fire Sciences (2001), 19(2),
 157-172

CODEN: JFSCDV; ISSN: 0734-9041

PUBLISHER: Technomic Publishing Co., Inc.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Pre-irradiation of the ABS and SBS copolymers, grafting of monomers
 (MAA and AA) onto both copolymers (ABS/SBS-g-MAA/AA) and ion
 exchange of the resulted grafts with cations, such as, Na⁺, K⁺,
 Mg²⁺, Ca²⁺ ABS/SBS-g-MAA/AA-S(Na⁺), K⁺/Mg²⁺, Ca⁺⁺ were involved in
 grafting. A study has been made using the elevated temperature LOI and
 CONE in this paper focusing on appraisal of the halogen- and
 phosphorus-free approach imparting flame retardancy to ABS and SBS
 copolymers and confirmation of carbon accumulation, extent of
 crosslinking and onset of charring as functions of temperature by the
 XPS technique. LOI technique at elevated temps. and cone
 calorimetry based on the oxygen consumption principle give
 parameters definitely associated with the grafting rate (Gr), such as
 TI, pk-HRR, SEA, EHC, etc., for each step in grafting.
 Flammability tests show that the grafting induced by electron beam
 has led to a large increase in LOI, e.g., ABS-MAA-S(Ca²⁺), + 16.5
 units, TI, e.g., SBS-g-MAA-S(Mg), +42.8C; cone (25 kWm): TTI.
 e.g., ABS-MAA-S(Na), +28% and dramatic decreases in pk-HRR, e.g.,
 ABS-MAA-S(Na), -67%, pk-MLR, e.g., ABS-MAA-S(Ca), -73%, SEAF,
 e.g., SBS-MAA-S(Ca), -65%, etc. Most exptl. data were studied and
 confirmed by XPS data.

IT 114464-60-7, Acrylic acid-butadiene-styrene graft
 copolymer sodium salt 389105-52-6 389105-53-7
 389105-56-0

RL: PRP (Properties)

(flammability of electron-beam-induced grafted of ABS and SBS
 copolymers studied by limiting oxygen index/cone calorimetry
 and XPS)

RN 114464-60-7 HCAPLUS

CN 2-Propenoic acid, polymer with 1,3-butadiene and ethenylbenzene,
 sodium salt; graft (9CI) (CA INDEX NAME)

CM 1

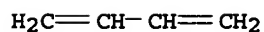
CRN 113974-98-4

CMF (C8 H8 . C4 H6 . C3 H4 O2)x

CCI PMS

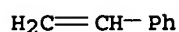
CM 2

CRN 106-99-0
CMF C4 H6



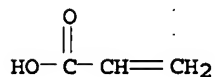
CM 3

CRN 100-42-5
CMF C8 H8



CM 4

CRN 79-10-7
CMF C3 H4 O2



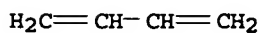
RN 389105-52-6 HCAPLUS
CN 2-Propenoic acid, polymer with 1,3-butadiene and ethenylbenzene,
graft, potassium salt (9CI) (CA INDEX NAME)

CM 1

CRN 113974-98-4
CMF (C8 H8 . C4 H6 . C3 H4 O2)x
CCI PMS

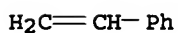
CM 2

CRN 106-99-0
CMF C4 H6



CM 3

CRN 100-42-5
CMF C8 H8



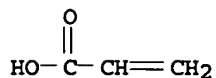
CM 4

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Poulos 10/681,091

11/28/2005

CRN 79-10-7
CMF C3 H4 O2



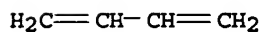
RN 389105-53-7 HCAPLUS
CN 2-Propenoic acid, polymer with 1,3-butadiene and ethenylbenzene,
graft, calcium salt (9CI) (CA INDEX NAME)

CM 1

CRN 113974-98-4
CMF (C8 H8 . C4 H6 . C3 H4 O2)x
CCI PMS

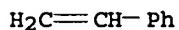
CM 2

CRN 106-99-0
CMF C4 H6



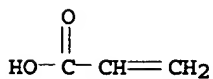
CM 3

CRN 100-42-5
CMF C8 H8



CM 4

CRN 79-10-7
CMF C3 H4 O2



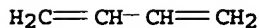
RN 389105-56-0 HCAPLUS
CN 2-Propenoic acid, polymer with 1,3-butadiene and ethenylbenzene,
graft, magnesium salt (9CI) (CA INDEX NAME)

CM 1

CRN 113974-98-4
CMF (C8 H8 . C4 H6 . C3 H4 O2)x
CCI PMS

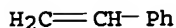
CM 2

CRN 106-99-0
CMF C4 H6



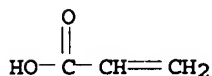
CM 3

CRN 100-42-5
CMF C8 H8



CM 4

CRN 79-10-7
CMF C3 H4 O2



CC 37-5 (Plastics Manufacture and Processing)
Section cross-reference(s): 35, 39
IT 112572-61-9, Butadiene-methacrylic acid-styrene graft copolymer
113974-98-4, Acrylic acid-butadiene-styrene graft copolymer
114464-60-7, Acrylic acid-butadiene-styrene graft
copolymer sodium salt 389104-12-5, Butadiene-methacrylic
acid-styrene graft copolymer sodium salt 389104-13-6,
Butadiene-methacrylic acid-styrene graft copolymer potassium salt
389104-14-7 389104-15-8 389105-52-6
389105-53-7 389105-56-0
RL: PRP (Properties)
(flammability of electron-beam-induced grafted of ABS and SBS
copolymers studied by limiting oxygen index/cone calorimetry
and XPS)
REFERENCE COUNT: 23 THERE ARE 23 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L103 ANSWER 3 OF 3 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1988:205706 HCAPLUS
DOCUMENT NUMBER: 108:205706
TITLE: Impact-resistant thermoplastic molding
composition
INVENTOR(S): Echite, Adolf; Schwaben, Hans Dieter;
Klaerner, Peter
PATENT ASSIGNEE(S): BASF A.-G., Fed. Rep. Ger.
SOURCE: Ger. Offen., 8 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 3617361	A1	19871210	DE 1986-3617361	1986 0523
EP 250836	A2	19880107	EP 1987-107390	1987 0521
EP 250836	A3	19891025		
EP 250836	B1	19940202		
R: BE, DE, FR, GB, NL				
PRIORITY APPLN. INFO.:			DE 1986-3617361	A 1986 0523

AB Radical polymerization of aromatic vinyl monomers and acrylic acid in the presence of an elastomer such as polybutadiene and an ionic crosslinker selected from alkali metal, alkaline earth metal, and Zn salts of C16-22 fatty acids gives an impact-resistant composition for use as moldings. Styrene 88.0, Buna HX 529 C 7.9, acrylic acid 0.4, and Zn stearate were used in the manufacture of a composition having notched impact strength (DIN 53753) 16.5 kJ/m², break elongation 8.7%, Vicat softening temperature 89.7°, and gel content (in toluene) 33.2%.

IT 114464-59-4P, Acrylic acid-butadiene-styrene graft copolymer zinc salt 114464-60-7P, Acrylic acid-butadiene-styrene graft copolymer sodium salt
 RL: PREP (Preparation)
 (preparation of impact-resistant)

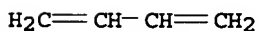
RN 114464-59-4 HCAPLUS
 CN 2-Propenoic acid, polymer with 1,3-butadiene and ethenylbenzene, zinc salt, graft (9CI) (CA INDEX NAME)

CM 1

CRN 113974-98-4
 CMF (C8 H8 . C4 H6 . C3 H4 O2)x
 CCI PMS

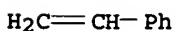
CM 2

CRN 106-99-0
 CMF C4 H6



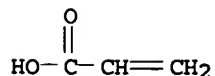
CM 3

CRN 100-42-5
 CMF C8 H8



CM 4

CRN 79-10-7
CMF C3 H4 O2



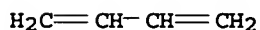
RN 114464-60-7 HCAPLUS
CN 2-Propenoic acid, polymer with 1,3-butadiene and ethenylbenzene,
sodium salt, graft (9CI) (CA INDEX NAME)

CM 1

CRN 113974-98-4
CMF (C8 H8 . C4 H6 . C3 H4 O2)x
CCI PMS

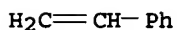
CM 2

CRN 106-99-0
CMF C4 H6



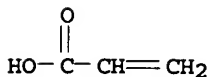
CM 3

CRN 100-42-5
CMF C8 H8



CM 4

CRN 79-10-7
CMF C3 H4 O2



IC ICM C08L025-00
ICS C08L051-04; C08F279-02; C08F279-06; C08F002-44; C08F285-00
ICA C08F036-06; C08F012-06; C08F220-06; C08F220-10; C08F220-44;
C08F222-40; C08F222-06
ICI C08L025-08, C08L033-02
CC 37-6 (Plastics Manufacture and Processing)
IT 114464-59-4P, Acrylic acid-butadiene-styrene graft
copolymer zinc salt 114464-60-7P, Acrylic
acid-butadiene-styrene graft copolymer sodium salt
RL: PREP (Preparation)
(preparation of impact-resistant)

=> => d que stat 1121
L4 STR

C=C
1 2

NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 2

STEREO ATTRIBUTES: NONE
L5 STR

C=C-C-C=C
1 2 3 4

NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 4

STEREO ATTRIBUTES: NONE
L7 SCR 2043
L23 STR

C=C~G1 5 8
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 || ||
 C=O C=G2
@3 4 @7 9

VAR G1=3/7/CN
VAR G2=N/CN
NODE ATTRIBUTES:
CONNECT IS E1 RC AT 5
CONNECT IS E1 RC AT 8
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
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NUMBER OF NODES IS 9

STEREO ATTRIBUTES: NONE
L24 SCR 2077
L26 8354 SEA FILE=REGISTRY SSS FUL L4 AND L5 AND L23 AND L7 AND
L24
L27 STR

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1 2 3

NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM

GGCAT IS UNS AT 3
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 3

STEREO ATTRIBUTES: NONE

L29 5043 SEA FILE=REGISTRY SUB=L26 SSS FUL (L27 AND L5 AND L23)
L30 18545 SEA FILE=REGISTRY ABB=ON PLU=ON 107-13-1/CRN
L31 58027 SEA FILE=REGISTRY ABB=ON PLU=ON 79-10-7/CRN
L32 13864 SEA FILE=REGISTRY ABB=ON PLU=ON 79-06-1/CRN
L33 44757 SEA FILE=REGISTRY ABB=ON PLU=ON 79-41-4/CRN
L34 5511 SEA FILE=REGISTRY ABB=ON PLU=ON 97-65-4/CRN
L35 10015 SEA FILE=REGISTRY ABB=ON PLU=ON 106-99-0/CRN
L36 71546 SEA FILE=REGISTRY ABB=ON PLU=ON 100-42-5/CRN
L37 3042 SEA FILE=REGISTRY ABB=ON PLU=ON ((L30 OR L31 OR L32
OR L33 OR L34)) AND L35 AND L36
L41 464105 SEA FILE=HCAPLUS ABB=ON PLU=ON LATEX? OR RUBBER? OR
ELASTOMER?
L43 5 SEA FILE=REGISTRY ABB=ON PLU=ON 113974-98-4/CRN
L44 2101 SEA FILE=REGISTRY ABB=ON PLU=ON L26 AND 3/NC
L45 2247 SEA FILE=REGISTRY ABB=ON PLU=ON L26 AND 4/NC
L46 724 SEA FILE=REGISTRY ABB=ON PLU=ON L29 AND 3/NC
L47 1268 SEA FILE=REGISTRY ABB=ON PLU=ON L29 AND 4/NC
L48 27 SEA FILE=REGISTRY ABB=ON PLU=ON L37 AND 3/NC
L49 595 SEA FILE=REGISTRY ABB=ON PLU=ON L37 AND 4/NC
L50 1 SEA FILE=REGISTRY ABB=ON PLU=ON 114464-60-7/RN
L51 3 SEA FILE=HCAPLUS ABB=ON PLU=ON L50
L52 3 SEA FILE=HCAPLUS ABB=ON PLU=ON L43
L53 30514 SEA FILE=HCAPLUS ABB=ON PLU=ON L44
L54 27642 SEA FILE=HCAPLUS ABB=ON PLU=ON L46
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L58 2954 SEA FILE=HCAPLUS ABB=ON PLU=ON L49
L59 33121 SEA FILE=HCAPLUS ABB=ON PLU=ON (L53 OR L54 OR L55 OR
L56 OR L57 OR L58)
L68 98 SEA FILE=HCAPLUS ABB=ON PLU=ON GRADIENT? (2A) REGIM?
L70 227427 SEA FILE=HCAPLUS ABB=ON PLU=ON GRADIENT?
L72 17586 SEA FILE=HCAPLUS ABB=ON PLU=ON COMPONENT? (3A) (INCREAS
? OR DECREAS?)
L74 70532 SEA FILE=HCAPLUS ABB=ON PLU=ON LATEX?
L76 30514 SEA FILE=HCAPLUS ABB=ON PLU=ON (L53 OR L54 OR L55)
L77 3462 SEA FILE=HCAPLUS ABB=ON PLU=ON L76 AND L74
L79 7 SEA FILE=HCAPLUS ABB=ON PLU=ON L77 AND L70
L80 1 SEA FILE=HCAPLUS ABB=ON PLU=ON L59 AND L68
L81 59 SEA FILE=HCAPLUS ABB=ON PLU=ON L59 AND L70
L82 34 SEA FILE=HCAPLUS ABB=ON PLU=ON L81 AND L41
L83 8 SEA FILE=HCAPLUS ABB=ON PLU=ON L82 AND L74
L85 2 SEA FILE=HCAPLUS ABB=ON PLU=ON L77 AND L72
L86 4154 SEA FILE=HCAPLUS ABB=ON PLU=ON L59 AND (INCR? OR
DECR? OR CONTINU?)
L87 1411 SEA FILE=HCAPLUS ABB=ON PLU=ON L86 AND (TIME? OR
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L88 1073 SEA FILE=HCAPLUS ABB=ON PLU=ON L87 AND (TEMP# OR
TEMPERATURE# OR HEAT? OR THERMAL? OR DEG# OR DEGREE#
OR CENTIGRAD? OR CELSIUS? OR FAHRENHEIT? OR KELVIN? OR
COOL? OR FREEZ? OR FROZ? OR CHILL?)
L89 5 SEA FILE=HCAPLUS ABB=ON PLU=ON L88 AND L70
L90 29 SEA FILE=HCAPLUS ABB=ON PLU=ON L81 AND (INCR? OR
DECR? OR CONT?)

L91 15 SEA FILE=HCAPLUS ABB=ON PLU=ON L81 AND (TIME? OR
 SEC# OR SECOND? OR MIN# OR MINUTE# OR HOUR# OR HR#)
 L92 37 SEA FILE=HCAPLUS ABB=ON PLU=ON L81 AND (TEMP# OR
 TEMPERATURE# OR HEAT? OR THERMAL? OR DEG# OR DEGREE#
 OR CENTIGRAD? OR CELSIUS? OR FAHRENHEIT? OR KELVIN? OR
 COOL? OR FREEZ? OR FROZ? OR CHILL?)
 L97 61 SEA FILE=HCAPLUS ABB=ON PLU=ON (L79 OR L80 OR L81 OR
 L82 OR L83) OR L85
 L98 46 SEA FILE=HCAPLUS ABB=ON PLU=ON (L89 OR L90 OR L91 OR
 L92)
 L99 61 SEA FILE=HCAPLUS ABB=ON PLU=ON L97 OR L98
 L101 5 SEA FILE=HCAPLUS ABB=ON PLU=ON L99 AND COAT?
 L102 61 SEA FILE=HCAPLUS ABB=ON PLU=ON L99 OR L101
 L103 3 SEA FILE=HCAPLUS ABB=ON PLU=ON L51 OR L52
 L104 63 SEA FILE=HCAPLUS ABB=ON PLU=ON L103 OR L102
 L106 8 SEA FILE=HCAPLUS ABB=ON PLU=ON L104 AND (WEIGHT? OR
 WT? OR PERCENT? OR PER(W)CENT? OR PCT?)
 L107 9 SEA FILE=HCAPLUS ABB=ON PLU=ON L104 AND COMPONENT?
 L108 63 SEA FILE=HCAPLUS ABB=ON PLU=ON L104 OR L106 OR L107
 L109 2 SEA FILE=HCAPLUS ABB=ON PLU=ON L108 AND MOLAR?
 L110 63 SEA FILE=HCAPLUS ABB=ON PLU=ON L108 OR L109
 L111 4 SEA FILE=HCAPLUS ABB=ON PLU=ON L57 AND L70
 L112 4 SEA FILE=HCAPLUS ABB=ON PLU=ON L110 OR L111
 L113 63 SEA FILE=HCAPLUS ABB=ON PLU=ON L110 OR L111 OR L112
 L115 7724 SEA FILE=HCAPLUS ABB=ON PLU=ON COATINGS/CT
 L116 123267 SEA FILE=HCAPLUS ABB=ON PLU=ON "COATING PROCESS"/CT
 L117 268501 SEA FILE=HCAPLUS ABB=ON PLU=ON COATING MATERIALS/CT
 L118 2 SEA FILE=HCAPLUS ABB=ON PLU=ON L113 AND ((L115 OR
 L116 OR L117))
 L119 63 SEA FILE=HCAPLUS ABB=ON PLU=ON L118 OR L113
 L120 60 SEA FILE=HCAPLUS ABB=ON PLU=ON L119 NOT L103
 L121 35 SEA FILE=HCAPLUS ABB=ON PLU=ON L120 AND L41

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L121 ANSWER 1 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 2005:519284 HCAPLUS
 DOCUMENT NUMBER: 143:79234
 TITLE: Polymer gradient functional material
 preparing method
 INVENTOR(S): Wu, Gang; Wen, Bianying
 PATENT ASSIGNEE(S): Beijing Chemical Industry Univ., Peop. Rep.
 China
 SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu,
 No pp. given
 CODEN: CNXXEV
 DOCUMENT TYPE: Patent
 LANGUAGE: Chinese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 1510069	A	20040707	CN 2002-158523	2002 1225
PRIORITY APPLN. INFO.:			CN 2002-158523	2002 1225

AB A process for preparing the functional **gradient** polymer material features that according to its requirement to **components** and properties, the raw materials are proportionally and hierarchically fed to the extruder, the **temperature** at outlet of extruder is **controlled** in the fusion **temperature** range of material to extrude out the fused sheet band with 0.25-3 mm of thickness, and the obtained sheet band is wound or overlapped to obtain said **gradient** material.

IT 9003-56-9, ABS resin
 RL: PEP (Physical, engineering or chemical process); POF (Polymer in formulation); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
 (preparation of polymer **gradient** functional materials)

RN 9003-56-9 HCAPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

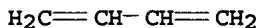
CMF C3 H3 N



CM 2

CRN 106-99-0

CMF C4 H6



CM 3

CRN 100-42-5

CMF C8 H8



IC ICM C08J003-00

CC 38-2 (Plastics Fabrication and Uses)

ST polymer **gradient** functional material extrusion

IT Carbon fibers, uses
 Clays, uses
 Glass fibers, uses
 Metallic fibers

RL: MOA (Modifier or additive use); USES (Uses)
 (polymer reinforced with; preparation of polymer **gradient** functional materials)

IT Extrusion of plastics and **rubbers**
 (preparation of polymer **gradient** functional materials)

IT Polyamides, uses
 Polyesters, uses

RL: POF (Polymer in formulation); TEM (Technical or engineered

material use); USES (Uses)
 (preparation of polymer gradient functional materials)
 IT Polymer blends
 RL: TEM (Technical or engineered material use); USES (Uses)
 (preparation of polymer gradient functional materials)
 IT 471-34-1, Calcium carbonate, uses 14807-96-6, Talc, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (polymer reinforced with; preparation of polymer gradient
 functional materials)
 IT 9003-07-0, Polypropylene 9003-56-9, ABS resin
 25038-54-4, Nylon 6, uses
 RL: PEP (Physical, engineering or chemical process); POF (Polymer
 in formulation); PYP (Physical process); TEM (Technical or
 engineered material use); PROC (Process); USES (Uses)
 (preparation of polymer gradient functional materials)
 IT 9002-88-4, Polyethylene 9003-53-6, Polystyrene
 RL: POF (Polymer in formulation); TEM (Technical or engineered
 material use); USES (Uses)
 (preparation of polymer gradient functional materials)

L121 ANSWER 2 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2005:395361 HCAPLUS

DOCUMENT NUMBER: 142:412758

TITLE: Rubber latex, preparation
 and grafting the latex for impact
 modifiers

INVENTOR(S): Jeong, Ok-Yeol; Kim, Geon-Soo; Lee, Chan-Hong;
 Kim, Young-Sim

PATENT ASSIGNEE(S): LG Chem. Ltd., S. Korea

SOURCE: PCT Int. Appl., 36 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005040225	A1	20050506	WO 2004-KR2754	2004 1029

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ,
 CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG,
 ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP,
 KE, KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG,
 MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT,
 RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT,
 TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
 RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
 ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH,
 CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU,
 MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI,
 CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: KR 2003-76046 A 2003
 1029

AB The rubber latex includes a rubber
 monomer main component and has a decreasing
 gel content from a core to a shell(s). The preparation includes
 polymerizing a core followed by polymerization of a shell(s) which has a lower

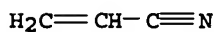
X

gel content that the core. The impact modifier is prepared by common graft polymerization using rubber latex as a substrate. The rubber latex has a high gel content core and a low gel content shell(s), and is free from problems involving low or high gel content rubber particles. The rubber latex can be used as substrate for a high efficiency impact modifier with high rubber content and enhanced impact strength and processability.

IT 9003-56-9, Acrylonitrile butadiene styrene copolymer
 RL: POF (Polymer in formulation); USES (Uses)
 (rubber of high gel content core and a low gel content shell for latex grafted impact modifier for)
 RN 9003-56-9 HCAPLUS
 CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene (9CI) (CA INDEX NAME)

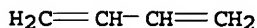
CM 1

CRN 107-13-1
 CMF C3 H3 N



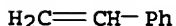
CM 2

CRN 106-99-0
 CMF C4 H6



CM 3

CRN 100-42-5
 CMF C8 H8



IC ICM C08C001-00
 ICS C08L055-00; C08L031-02
 CC 39-4 (Synthetic Elastomers and Natural Rubber)
 Section cross-reference(s): 37
 ST rubber high gel core latex impact modifier
 IT Synthetic rubber, preparation
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
 (butadiene-divinylbenzene, core-shell; rubber of high gel content core and a low gel content shell for latex grafted impact modifier)
 IT Synthetic rubber, preparation
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
 (butadiene-divinylbenzene-styrene, core-shell; rubber of high gel content core and a low gel content shell for

IT latex grafted impact modifier)
 IT Polymerization
 (graft; rubber of high gel content core and a low gel
 content shell for latex grafted impact modifier)
 IT Impact modifiers
 (rubber of high gel content core and a low gel
 content shell for latex grafted impact modifier)
 IT Epoxy resins, uses
 Polyamides, uses
 Polycarbonates, uses
 Polyesters, uses
 RL: POF (Polymer in formulation); USES (Uses)
 (rubber of high gel content core and a low gel
 content shell for latex grafted impact modifier for)
 IT Plastics, uses
 RL: POF (Polymer in formulation); USES (Uses)
 (thermoplastics; rubber of high gel content core and
 a low gel content shell for latex grafted impact
 modifier for)
 IT Plastics, uses
 RL: POF (Polymer in formulation); USES (Uses)
 (thermosetting plastics; rubber of high gel content
 core and a low gel content shell for latex grafted
 impact modifier for)
 IT 109170-18-5P, Butadiene-divinylbenzene-methyl methacrylate-styrene
 graft copolymer 110453-27-5P, Butadiene-butyl
 acrylate-divinylbenzene-methyl methacrylate-styrene graft
 copolymer 722110-47-6P, Acrylonitrile-allyl methacrylate-
 butadiene-divinylbenzene-methyl methacrylate-styrene graft
 copolymer
 RL: IMF (Industrial manufacture); MOA (Modifier or additive use);
 PREP (Preparation); USES (Uses)
 (rubber of high gel content core and a low gel
 content shell for latex grafted impact modifier)
 IT 9002-86-2, Polyvinyl chloride 9003-54-7, Styrene acrylonitrile
 copolymer 9003-56-9, Acrylonitrile butadiene styrene
 copolymer 9011-14-7, Methyl methacrylate polymer 25038-59-9,
 uses
 RL: POF (Polymer in formulation); USES (Uses)
 (rubber of high gel content core and a low gel
 content shell for latex grafted impact modifier for)
 REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE
 FOR THIS RECORD. ALL CITATIONS AVAILABLE
 IN THE RE FORMAT

L121 ANSWER 3 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2005:254452 HCAPLUS

DOCUMENT NUMBER: 142:298832

TITLE: Olefin-based thermoplastic alloy, blending,
 and molded parts containing the
 polymer alloy

INVENTOR(S): Lieberman, Mark

PATENT ASSIGNEE(S): ACI Technologies, LLC, USA

SOURCE: U.S., 17 pp., Cont.-in-part of U.S. Ser. No.
 921,773.

CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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US 6870005	B1	20050322	US 2002-85334	2002
				0228
US 6670421	B1	20031230	US 2001-921773	2001
				0803
PRIORITY APPLN. INFO.:		US 2001-921773	A2	2001
				0803

AB A polymeric composition contains an olefinic polymer component selected from ≥ 1 group which includes polyalkylenes, copolymers of polyalkylenes, and a nonolefinic thermoplastic, and compatibilizers. The nonolefinic and olefinic polymeric components are in random orientable locations in the initial polymeric composition. When injection molded against a temperature gradient, the resulting workpiece composed of the composition has distinctive regions of elevated nonolefinic concentration proximate the outwardly oriented surface and distinctive regions of elevated olefinic polymeric concentration proximate to interior regions of the workpiece. The nonolefinic thermoplastic may be ≥ 1 of thermoplastic polyamides, thermoplastic polyolefins and thermoplastic polycarbonates.

IT 9003-56-9, Acrylonitrile-butadiene-styrene copolymer
 RL: PEP (Physical, engineering or chemical process); POF (Polymer in formulation); PYP (Physical process); PROC (Process); USES (Uses)

(olefin-based thermoplastic alloy for making molded parts with regions of nonolefinic thermoplastic at the surface and olefinic thermoplastic in the interior)

RN 9003-56-9 HCAPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

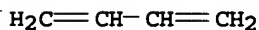
CMF C3 H3 N



CM 2

CRN 106-99-0

CMF C4 H6



CM 3

CRN 100-42-5

CMF C8 H8

H₂C=CH-Ph

IC ICM C08L083-04
 INCL 525101000; 428098000; 428475500; 428500000; 525106000; 525166000;
 525177000; 525179000; 525184000; 525185000
 CC 37-6 (Plastics Manufacture and Processing)
 IT Polyamides, uses
 Polycarbonates, uses
 Polyesters, uses
 Polyolefins
 Thermoplastic rubber
 RL: PEP (Physical, engineering or chemical process); POF (Polymer
 in formulation); PYP (Physical process); PROC (Process); USES
 (Uses)
 (olefin-based thermoplastic alloy for making molded parts with
 regions of nonolefinic thermoplastic at the surface and
 olefinic thermoplastic in the interior)
 IT 9003-07-0, Polypropylene 9003-56-9, Acrylonitrile-
 butadiene-styrene copolymer 24968-12-5, Polybutylene
 terephthalate 25038-59-9, uses 26062-94-2, Polybutylene
 terephthalate 32131-17-2, uses
 RL: PEP (Physical, engineering or chemical process); POF (Polymer
 in formulation); PYP (Physical process); PROC (Process); USES
 (Uses)
 (olefin-based thermoplastic alloy for making molded parts with
 regions of nonolefinic thermoplastic at the surface and
 olefinic thermoplastic in the interior)
 REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE
 FOR THIS RECORD. ALL CITATIONS AVAILABLE
 IN THE RE FORMAT

L121 ANSWER 4 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 2004:902596 HCAPLUS
 DOCUMENT NUMBER: 142:57121
 TITLE: Heterogeneity in Styrene-Butadiene
 Latex Films
 AUTHOR(S): Santos, Juliane P.; Corpart, Pascale; Wong,
 Kenneth; Galembeck, Fernando
 CORPORATE SOURCE: Institute of Chemistry, Universidade Estadual
 de Campinas, Campinas, 13083-970, Brazil
 SOURCE: Langmuir (2004), 20(24), 10576-10582
 CODEN: LANGD5; ISSN: 0743-7463
 PUBLISHER: American Chemical Society
 DOCUMENT TYPE: Journal
 LANGUAGE: English

AB Low-Tg styrene-butadiene (SB) latex films were
 investigated by noncontact atomic force microscopy and scanning elec.
 potential microscopy, revealing a number of different morphologies
 and elec. potential patterns across films cast from the same SB
 latex dispersions under the same conditions. Surface
 leveling and charge dispersion throughout the films are, thus,
 restrained even at temps. above Tg and the min
 . film-formation temperature An unprecedented elec. pattern
 is observed, in which the particle cores are more pos. than the
 contacting particle outer layers. Different packing
 patterns, including cubic and hexagonal arrays, coexist in
 neighboring areas. Zonal centrifugation of the SB latex
 in sucrose d. gradient shows that particles cover a
 broad range of densities. Thus, film surface heterogeneity is at
 least partly due to particle heterogeneity. Fractal dimensions of
 topog. profiles are lower than those of the elec. potential

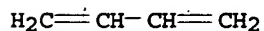
profiles, showing that charge mobility is much more restrained than polymer chain motion at the film surface and that it imposes a limit to the charged chain-ends motion.

IT 25085-39-6P, Acrylic acid-butadiene-styrene copolymer
 RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (heterogeneity in styrene-butadiene latex films)
 RN 25085-39-6 HCAPLUS
 CN 2-Propenoic acid, polymer with 1,3-butadiene and ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 106-99-0

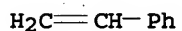
CMF C4 H6



CM 2

CRN 100-42-5

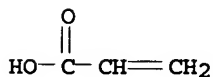
CMF C8 H8



CM 3

CRN 79-10-7

CMF C3 H4 O2



CC 37-5 (Plastics Manufacture and Processing)
 ST styrene butadiene copolymer latex film particle surface heterogeneity
 IT Electric potential
 Fractals
 Heterogeneity
 Latex
 (heterogeneity in styrene-butadiene latex films)
 IT Electric conductivity
 Glass transition temperature
 Particle size
 Polymer morphology
 Viscosity
 Zeta potential
 (properties of styrene-butadiene latex films)
 IT 25085-39-6P, Acrylic acid-butadiene-styrene copolymer
 RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (heterogeneity in styrene-butadiene latex films)
 REFERENCE COUNT: 38 THERE ARE 38 CITED REFERENCES AVAILABLE

FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L121 ANSWER 5 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2004:729431 HCAPLUS

DOCUMENT NUMBER: 142:412397

TITLE: Novel technique for preparing polymeric
gradient materials and related
structure properties

AUTHOR(S): Wen, Bianying; Wu, Gang; Hou, Shaohua

CORPORATE SOURCE: Key Laboratory Beijing City Preparation and
Processing of Noval Polymer Materials, College
Materials Sci. Eng., Beijing Univ. Chemical
Technology, Beijing, 100029, Peop. Rep. China

SOURCE: Fuhe Cailiao Xuebao (2004), 21(3), 151-156

CODEN: FCXUEC; ISSN: 1000-3851

PUBLISHER: Fuhe Cailiao Xuebao Bianjibu

DOCUMENT TYPE: Journal

LANGUAGE: Chinese

AB This paper proposes a novel extruding technique for preparing
polymeric gradient material. A columnar PP/ABS
gradient material was prepared by use of this method. The
composition, morphol. structure and mech. properties of the PP/ABS
gradient material along the radial direction were
investigated by using DSC, TEM and tensile tests. The results
indicate that the content of PP gradually
decreases while ABS gradually increases with
increasing radius. The TEM photographs show that the
morphol. also evolves with the varying in the content
ratio of two polymers. A phase inversion phenomenon was
recognized in this gradient material. Exptl. facts show
that the polymeric gradient material can be prepared
successfully by using this specific extruding technique.

IT 9003-56-9, ABS resins

RL: PEP (Physical, engineering or chemical process); POF (Polymer
in formulation); PRP (Properties); PYP (Physical process); TEM
(Technical or engineered material use); PROC (Process); USES
(Uses)

(extrusion process of polypropylene/ABS gradient
materials and its morphol. and mech. properties)

RN 9003-56-9 HCAPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene
(9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

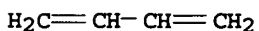
CMF C3 H3 N



CM 2

CRN 106-99-0

CMF C4 H6



CM 3

CRN 100-42-5

CMF C8 H8

H₂C=CH-Ph

- CC 38-3 (Plastics Fabrication and Uses)
Section cross-reference(s): 36
- ST polypropylene ABS resin **gradient** material extrusion
morphol mech property
- IT Elongation at break
Extrusion of plastics and **rubbers**
Tensile strength
(extrusion process of polypropylene/ABS **gradient**
materials and its morphol. and mech. properties)
- IT Polymer morphology
(microdomain; extrusion process of polypropylene/ABS
gradient materials and its morphol. and mech.
properties)
- IT 9003-07-0, Polypropylene 9003-56-9, ABS resins
RL: PEP (Physical, engineering or chemical process); POF (Polymer
in formulation); PRP (Properties); PYP (Physical process); TEM
(Technical or engineered material use); PROC (Process); USES
(Uses)
(extrusion process of polypropylene/ABS **gradient**
materials and its morphol. and mech. properties)

L121 ANSWER 6 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2004:245120 HCAPLUS

DOCUMENT NUMBER: 141:7916

TITLE: An experimental investigation of the
large-strain tensile behavior of neat and
rubber-toughened polycarbonate

AUTHOR(S): Parsons, E.; Boyce, M. C.; Parks, D. M.

CORPORATE SOURCE: Department of Mechanical Engineering,
Massachusetts Institute of Technology,
Cambridge, MA, 02139, USA

SOURCE: Polymer (2004), 45(8), 2665-2684

CODEN: POLMAG; ISSN: 0032-3861

PUBLISHER: Elsevier Science Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The large-strain tensile behavior of polycarbonate and
polycarbonate filled with several volume fractions (f) of
rubber particles is studied via an optical technique.
Digital image correlation is used to determine, in two dimensions, the
local displacement **gradients** and full-field
displacements during a uniaxial tension test. Full-field strain
contours, macroscopic true stress-strain behavior, and
local volumetric strain are reduced from the raw test data.
Full-field strain **contours** exhibit a **decreasing**
degree of localization with **increasing** f. The
true stress-strain results show a **decrease** in modulus,
yield stress, post-yield strain softening, and subsequent strain
hardening with **increasing** f. The volumetric strain
decreases with **increasing** f as well. In the
case of the neat polymer, comparisons are made to a

three-dimensional finite element simulation.

IT 107080-92-2, Butadiene-methyl methacrylate-styrene graft copolymer
 RL: MOA (Modifier or additive use); USES (Uses)
 (rubber, core-shell particles; large-strain tensile behavior of neat and Me methacrylate-styrene-grafted butadiene rubber-toughened polycarbonate)

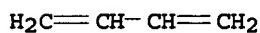
RN 107080-92-2 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, methyl ester, polymer with 1,3-butadiene and ethenylbenzene, graft (9CI) (CA INDEX NAME)

CM 1

CRN 106-99-0

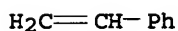
CMF C4 H6



CM 2

CRN 100-42-5

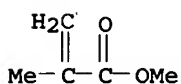
CMF C8 H8



CM 3

CRN 80-62-6

CMF C5 H8 O2



CC 37-5 (Plastics Manufacture and Processing)
 Section cross-reference(s): 39

ST tensile stress strain bisphenol A polycarbonate butadiene graft rubber

IT Butadiene rubber, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (Me methacrylate- and styrene-grafted, 5, 15, and 25%; large-strain tensile behavior of neat and Me methacrylate-styrene-grafted butadiene rubber-toughened polycarbonate)

IT Stress-strain relationship
 Tensile strength
 (large-strain tensile behavior of neat and Me methacrylate-styrene-grafted butadiene rubber-toughened polycarbonate)

IT Polycarbonates, properties
 RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)
 (large-strain tensile behavior of neat and Me methacrylate-styrene-grafted butadiene rubber-toughened polycarbonate)

- IT Stress, mechanical
(yield; large-strain tensile behavior of neat and Me methacrylate-styrene-grafted butadiene rubber-toughened polycarbonate)
- IT 25037-45-0, Bisphenol A-carbonic acid copolymer
RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)
(assumed monomers; large-strain tensile behavior of neat and Me methacrylate-styrene-grafted butadiene rubber-toughened polycarbonate)
- IT 9003-17-2
RL: MOA (Modifier or additive use); USES (Uses)
(butadiene rubber, Me methacrylate- and styrene-grafted, 5, 15, and 25%; large-strain tensile behavior of neat and Me methacrylate-styrene-grafted butadiene rubber-toughened polycarbonate)
- IT 24936-68-3, Makrolon 2608, properties
RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)
(large-strain tensile behavior of neat and Me methacrylate-styrene-grafted butadiene rubber-toughened polycarbonate)
- IT 107080-92-2, Butadiene-methyl methacrylate-styrene graft copolymer
RL: MOA (Modifier or additive use); USES (Uses)
(rubber, core-shell particles; large-strain tensile behavior of neat and Me methacrylate-styrene-grafted butadiene rubber-toughened polycarbonate)

REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L121 ANSWER 7 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2002:422831 HCAPLUS

DOCUMENT NUMBER: 136:402921

TITLE: Plastic moldings containing recycled plastics having good moldability and peeling resistance, their manufacture, and apparatus
INVENTOR(S): Nagayasu, Kozo; Miyashita, Takuya; Yoshikawa, Nobumasa

PATENT ASSIGNEE(S): Kawasaki Heavy Industries, Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 10 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002160244	A2	20020604	JP 2000-358943	2000 1127
JP 3445239	B2	20030908	JP 2000-358943	2000 1127

PRIORITY APPLN. INFO.: JP 2000-358943

- AB The moldings comprises ≥ 1 virgin plastic and ≥ 1 waste plastic, wherein ratio of virgin plastic is high in their surface and ratio of recycled plastics become higher as distance become far from the surface. A virgin polyamides-ABS mixture containing glass and C short fibers is placed with a recycled

colored polyamides-ABS mixture containing glass and C short fibers to have composition gradient in a mold and heated to give a molding showing good impact resistance.

IT 9003-56-9, ABS resin
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (plastic moldings containing recycled plastics having good moldability and peeling resistance, their manufacture, and apparatus)

RN 9003-56-9 HCAPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

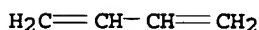
CMF C3 H3 N



CM 2

CRN 106-99-0

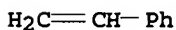
CMF C4 H6



CM 3

CRN 100-42-5

CMF C8 H8



IC ICM B29C043-20
 ICS B29B017-00; B29C031-06; B29C043-34; B29C045-16; B32B005-14; B29K105-26

CC 38-3 (Plastics Fabrication and Uses)

ST molding recycled plastic compn gradient manuf; polyamide

ABS molding peeling resistance moldability

IT Recycling of plastics and rubbers

(plastic moldings containing recycled plastics having good moldability and peeling resistance, their manufacture, and apparatus)

IT Polyamides, uses

RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)

(plastic moldings containing recycled plastics having good moldability and peeling resistance, their manufacture, and apparatus)

IT 9003-56-9, ABS resin

RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)

(plastic moldings containing recycled plastics having

good moldability and peeling resistance, their manufacture, and apparatus)

L121 ANSWER 8 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2002:289216 HCAPLUS

DOCUMENT NUMBER: 137:64106

TITLE: Variations in surface gloss on parts made by gas assisted injection moulding

AUTHOR(S): Liu, Shih-Jung; Lin, I-Hsuan

CORPORATE SOURCE: Department of Mechanical Engineering, Chang Gung University, Tao-Yuan, 333, Taiwan

SOURCE: Plastics, Rubber and Composites (2002), 31(1), 28-35

CODEN: PRUCFN; ISSN: 1465-8011

PUBLISHER: Maney Publishing

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Gas assisted injection molding has proved to be a breakthrough in molding technol. for thermoplastic materials. However, there are still unsolved problems that limit the overall success of this technique. The aim of this work was to study the phenomenon of gloss variations occurring across the surfaces of gas assisted injection molded parts. Expts. were carried out on an 80 t injection molding machine equipped with a high pressure, nitrogen gas injection unit. The materials used were pigmented acrylonitrile/butadiene/styrene copolymer and polypropylene. A plate cavity with a gas channel across its center was used to mold the parts. Various processing parameters were varied: melt temperature; mold temperature; melt filling speed; short shot size; gas pressure; and gas injection delay time. After molding, a glossmeter was used to determine the effects of these processing parameters on the surface gloss profiles of the parts. A roughness meter and scanning electronic microscope were also employed to characterize the surface quality of molded parts. In addition, a numerical anal. of the filling process was carried out to help better understand the mechanisms responsible for the phenomenon of surface gloss variations. It was found that the surface gloss difference occurs mainly in the transition area between channel and plate in the molded parts, which might be the result of the shear stress gradient in the polymer melt during the filling process. Surface roughness of molded parts might also be another factor resulting in the gloss difference problem.

IT 9003-56-9, Acrylonitrile-butadiene-styrene copolymer

RL: PEP (Physical, engineering or chemical process); PRP

(Properties); PYP (Physical process); PROC (Process)

(variations in surface gloss on parts made by gas assisted injection molding)

RN 9003-56-9 HCAPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

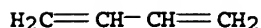
CRN 107-13-1

CMF C3 H3 N



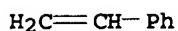
CM 2

CRN 106-99-0
CMF C4 H6



CM 3

CRN 100-42-5
CMF C8 H8



CC 38-3 (Plastics Fabrication and Uses)
IT Molding of plastics and rubbers
(injection, gas-assisted; variations in surface gloss on parts made by gas-assisted injection molding)
IT 9003-07-0, Polypropylene 9003-56-9, Acrylonitrile-butadiene-styrene copolymer
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); PROC (Process)
(variations in surface gloss on parts made by gas assisted injection molding)
REFERENCE COUNT: 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L121 ANSWER 9 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2001:656347 HCAPLUS
DOCUMENT NUMBER: 135:345298
TITLE: Membrane inflation of polymeric materials: experiments and finite element simulations
AUTHOR(S): Li, Yong; Nemes, James A.; Derdouri, A. A.
CORPORATE SOURCE: Mechanical Engineering Department, McGill University, Montreal, QC, H3A 2K6, Can.
SOURCE: Polymer Engineering and Science (2001), 41(8), 1399-1412
CODEN: PYESAZ; ISSN: 0032-3888
PUBLISHER: Society of Plastics Engineers
DOCUMENT TYPE: Journal
LANGUAGE: English

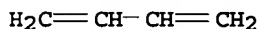
AB A high-speed optical measurement system, which is capable of measuring transient surface shape, is used in the polymer membrane inflation expts. The accurate measurement data, which is an array of points, with known Cartesian coordinates and with respect to a fixed coordinate system, provides a source for further bubble shape anal. Inflation pressure is correlated with each bubble shape measurement. The measured results reveal the importance of the thermal warpage and temperature gradient in the bubble inflation tests. Potential errors in the material parameter calcn., which are caused by assuming uniform temperature and zero thermal warpage, are pointed out. Consequently, a finite element anal. has been carried out to simulate the membrane inflation with/without thermal warpage and the temperature gradient. The material parameters obtained considering the thermal warpage and

temperature gradient yield improved agreement with the exptl. data. Although in this paper the measurement data is mainly used for the determination of the material parameters in the bubble inflation tests, they are also a source of validating other computer-aided simulations as well as in the study of the thermal shrinkage of polymer products.

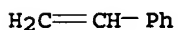
IT 9003-56-9, ABS
 RL: PRP (Properties)
 (expts. and finite element simulations for membrane inflation of polymeric materials)
 RN 9003-56-9 HCAPLUS
 CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene (9CI) (CA INDEX NAME)
 CM 1
 CRN 107-13-1
 CMF C3 H3 N



CM 2
 CRN 106-99-0
 CMF C4 H6



CM 3
 CRN 100-42-5
 CMF C8 H8



CC 38-2 (Plastics Fabrication and Uses)
 IT Deformation (mechanical)
 Membranes, nonbiological
 Molding of plastics and rubbers
 (expts. and finite element simulations for membrane inflation of polymeric materials)
 IT 9003-56-9, ABS
 RL: PRP (Properties)
 (expts. and finite element simulations for membrane inflation of polymeric materials)
 REFERENCE COUNT: 32 THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L121 ANSWER 10 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 2001:585297 HCAPLUS
 DOCUMENT NUMBER: 135:273609
 TITLE: Glossy difference on the surface of gas assisted injection molded parts

AUTHOR(S): Liu, Shih-Jung; Lin, I-Hsuan
 CORPORATE SOURCE: Polymer Rheology and Processing Laboratory,
 Department of Mechanical Engineering, Chang
 Gung University, Tao-Yuan, 333, Taiwan
 SOURCE: Polymeric Materials Science and Engineering
 (2001), 85, 504-505
 CODEN: PMSEDG; ISSN: 0743-0515
 PUBLISHER: American Chemical Society
 DOCUMENT TYPE: Journal
 LANGUAGE: English

AB The effect of different processing factors on the glossy
 difference of gas assisted injection molded parts of ABS copolymer
 and polypropylene was studied. The occurrence of the surface
 glossy difference results from the shear stress gradient
 of polymer melt during the filling process. Surface roughness of
 molded parts might be another factor resulting in the glossy
 difference problem. The formation mechanism of surface glossy
 difference was explained and steps can thus be taken to ensure
 that the glossy difference be minimized. This provides
 significant advantages in improving product quality of gas
 assisted injection-molded parts.

IT 9003-56-9, ABS copolymer
 RL: PEP (Physical, engineering or chemical process); PRP
 (Properties); PROC (Process)
 (glossy difference on surface of gas assisted injection molded
 parts)
 RN 9003-56-9 HCAPLUS
 CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene
 (9CI) (CA INDEX NAME)

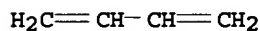
CM 1

CRN 107-13-1
 CMF C3 H3 N



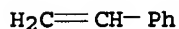
CM 2

CRN 106-99-0
 CMF C4 H6



CM 3

CRN 100-42-5
 CMF C8 H8



CC 37-5 (Plastics Manufacture and Processing)
 IT Molding of plastics and rubbers
 (injection; glossy difference on surface of gas assisted

injection molded parts of ABS copolymer and polypropylene)
 IT 9003-07-0, Polypropylene 9003-56-9, ABS copolymer
 RL: PEP (Physical, engineering or chemical process); PRP
 (Properties); PROC (Process)
 (glossy difference on surface of gas assisted injection molded
 parts)

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE
 FOR THIS RECORD. ALL CITATIONS AVAILABLE
 IN THE RE FORMAT

L121 ANSWER 11 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2000:851733 HCAPLUS

DOCUMENT NUMBER: 134:116967

TITLE: Preparation of thermoplastic elastomer
 using SBR latex interpenetrating
 network polymerization

AUTHOR(S): Shi, Shuxian; Kou, Yi; Xia, Yuzheng; Dong,
 Hanpeng; Li, Xiaoyu

CORPORATE SOURCE: College Materials Sci. Eng., Beijing Univ.
 Chemical Technology, Beijing, 100029, Peop.
 Rep. China

SOURCE: Hecheng Xiangjiao Gongye (2000), 23(6),
 348-351

CODEN: HXGOEA; ISSN: 1000-1255

PUBLISHER: Hecheng Xiangjiao Gongye Zazhi Bianjibu

DOCUMENT TYPE: Journal

LANGUAGE: Chinese

AB A new kind of core-shell latex with gradient
 distribution of hard polymer which based on SBR (styrene-butadiene
 rubber) latex was synthesized through two stage
 emulsion polymerization in order to prepare interpenetrating polymer
 network. Styrene (St), Me methacrylate (MMA), and acrylonitrile
 (AN) were selected as hard monomer and a redox initiation system
 was used. The effects on mech. properties and polymerization of hard
 monomers and crosslinker were studied. The morphol. of the
 materials was determined by transmission electron microscopy that the
 latex particles appeared as core-shell structure with hard
 polymer gradient distributed. The mech. properties of
 the SBR/P (St + MMA) interpenetrating polymer networks reached the
 tensile strength 9.3 MPa. The resulting materials were able to be
 reprocessed like thermoplastic elastomer.

IT 107080-92-2P, 1,3-Butadiene-methyl methacrylate-styrene
 graft copolymer

RL: PRP (Properties); SPN (Synthetic preparation); PREP
 (Preparation)

(rubber; preparation of thermoplastic elastomer
 using SBR latex interpenetrating network polymerization)

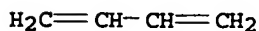
RN 107080-92-2 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, methyl ester, polymer with
 1,3-butadiene and ethenylbenzene, graft (9CI) (CA INDEX NAME)

CM 1

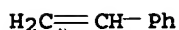
CRN 106-99-0

CMF C4 H6



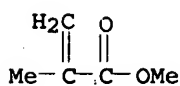
CM 2

CRN 100-42-5
CMF C8 H8



CM 3

CRN 80-62-6
CMF C5 H8 O2



- CC 39-4 (Synthetic Elastomers and Natural Rubber)
- ST styrene butadiene rubber latex
interpenetrating network; methyl methacrylate styrene butadiene
rubber latex interpenetrating network;
acrylonitrile styrene butadiene rubber latex
interpenetrating network
- IT Crosslinking agents
(effect on properties of thermoplastic elastomer
prepared using SBR latex interpenetrating network
polymerization)
- IT Thermoplastic rubber
RL: PRP (Properties); SPN (Synthetic preparation); PREP
(Preparation)
(effect on properties of thermoplastic elastomer
prepared using SBR latex interpenetrating network
polymerization)
- IT Polymerization
(emulsion, seed; preparation of thermoplastic elastomer
using SBR latex interpenetrating network polymerization)
- IT Styrene-butadiene rubber, preparation
RL: PRP (Properties); SPN (Synthetic preparation); PREP
(Preparation)
(graft polymers, with Me methacrylate; preparation of thermoplastic
elastomer using SBR latex interpenetrating
network polymerization)
- IT Interpenetrating polymer networks
Latex
(preparation of thermoplastic elastomer using SBR
latex interpenetrating network polymerization)
- IT Styrene-butadiene rubber, properties
RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)
(preparation of thermoplastic elastomer using SBR
latex interpenetrating network polymerization)
- IT Elongation, mechanical
Polymer morphology
Tensile strength
(properties of thermoplastic elastomer prepared using
SBR latex interpenetrating network polymerization)
- IT Strength
(tearing; properties of thermoplastic elastomer
prepared using SBR latex interpenetrating network
polymerization)

- IT 1680-21-3, Triethylene glycol diacrylate
RL: MOA (Modifier or additive use); USES (Uses)
(crosslinking agent effect on properties of thermoplastic elastomer prepared using SBR latex interpenetrating network polymerization)
- IT 9017-43-0P, Divinylbenzene-methyl methacrylate-styrene copolymer
RL: POF (Polymer in formulation); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(crosslinking agent effect on properties of thermoplastic elastomer prepared using SBR latex interpenetrating network polymerization)
- IT 9003-53-6P, Polystyrene 25034-86-0P, Methyl methacrylate-styrene copolymer 25213-88-1P, Acrylonitrile-methyl methacrylate-styrene copolymer
RL: POF (Polymer in formulation); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(preparation of thermoplastic elastomer using SBR latex interpenetrating network polymerization)
- IT 107080-92-2P, 1,3-Butadiene-methyl methacrylate-styrene graft copolymer
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(rubber; preparation of thermoplastic elastomer using SBR latex interpenetrating network polymerization)
- IT 106974-54-3P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(styrene-butadiene rubber, graft polymers, with Me methacrylate; preparation of thermoplastic elastomer using SBR latex interpenetrating network polymerization)
- IT 9003-55-8
RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)
(styrene-butadiene rubber, preparation of thermoplastic elastomer using SBR latex interpenetrating network polymerization)

L121 ANSWER 12 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1998:720425 HCAPLUS

DOCUMENT NUMBER: 130:96463

TITLE: Interfacial aspects in the production of advanced viscoelastic composites

AUTHOR(S): Khan, M. B.

CORPORATE SOURCE: Chemtec and Prime Glass, Jhelum, 49480, Pak.

SOURCE: Advanced Materials--97, [Proceedings of the International Symposium on Advanced Materials], 5th, Islamabad, Pak., Sept. 21-25, 1997 (1997), 57-65. Editor(s): Khan, M. Afzal. Dr. A. Q. Khan Research Laboratories Kahuta: Rawalpindi, Pak.

CODEN: 66YJAR

DOCUMENT TYPE: Conference

LANGUAGE: English

AB The integrity and morphol. of the interfacial junction often dictate the mech. and thermal response of multiphase engineering materials. The production of materials with synergistic properties requires the effective generation and consolidation of material interfaces. The paper examines this theme in viscoelastic systems, comprising polymer alloys, reactive composites, elec. insulation and reinforced commodity polymers. Processing protocol is identified through TEM/SEM for the nylon/ABS composite material that allows optimum utilization of reactive compatibilizers. Comparative results show that both

reactivity and miscibility are crucial for a compatibilizer to provide sufficient dispersion and adequate interfacial adhesion between the two phases. In discrete systems, interfacial coupling is normally accomplished by bonding agents which form chemical bridges across the particle-matrix interface. A recent technique, however, utilizes a lateral modulus gradient across the material interface to increase fracture energy (Mech. approach). Micromorphol. of a conventional composite sans bonding agent is compared with the latter modified via the mech. approach. Cryo-fracture surfaces of these composites reveal good particle-matrix adhesion in the modified composite, as opposed to visible particle pull-out observed in the other composite. A third approach toward interfacial coupling relies on the suitable modification of the particle surface to promote interaction between the particle and the polymer chains. This strategy is examined with particular reference to elec. cable sheathing and synthetic window profile, by using composite particles produced in the author's processing facility. ESCA spectrum of these particles is discussed, along with impact and TGA/DTA data for the modified PVC/EPDM composites. The impact strength of rigid PVC improved over a range of temps., including the important region of zero °C and below. TGA data displayed enhanced thermal stability by the EPDM insulation, that compares well with advanced silicone composites produced by leading manufacturers.

IT 9003-56-9, ABS plastic

RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)
(generation and consolidation of material interfaces in viscoelastic systems such as polymer alloys, reactive composites, elec. insulation and reinforced polymers)

RN 9003-56-9 HCAPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

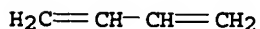
CMF C3 H3 N



CM 2

CRN 106-99-0

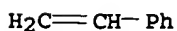
CMF C4 H6



CM 3

CRN 100-42-5

CMF C8 H8



CC 38-3 (Plastics Fabrication and Uses)
IT EPDM rubber
Polyamides, uses
RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)
(generation and consolidation of material interfaces in viscoelastic systems such as polymer alloys, reactive composites, elec. insulation and reinforced polymers)
IT 9002-86-2, PVC 9003-56-9, ABS plastic
RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)
(generation and consolidation of material interfaces in viscoelastic systems such as polymer alloys, reactive composites, elec. insulation and reinforced polymers)
REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L121 ANSWER 13 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1997:387151 HCAPLUS
DOCUMENT NUMBER: 127:70754
TITLE: Water uptake of soft lining materials from osmotic solutions
AUTHOR(S): Parker, S.; Riggs, P. D.; Braden, M.; Kalachandra, S.; Taylor, D. F.
CORPORATE SOURCE: Department of Biomaterials in Relation to Dentistry, St. Bartholomew's and Royal London School of Medicine and Dentistry, London, E12 AD, UK
SOURCE: Journal of Dentistry (1997), 25(3-4), 297-304
CODEN: JDENAB; ISSN: 0300-5712
PUBLISHER: Elsevier
DOCUMENT TYPE: Journal
LANGUAGE: English

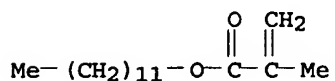
AB The water uptake characteristics of soft lining materials are of obvious importance in that they are expected to function in the oral environment. Results for Novus show a very high uptake from distilled water. Despite this high uptake, Novus appears to function satisfactorily in the mouth. High water uptake of soft lining materials has been attributed to the presence of water soluble impurities that, on immersion, form solution droplets; the driving force for the uptake being the osmotic gradient between the droplets and the external solution. Uptake should therefore be less from ionic solns. The object of this study was to test the applicability of this theory to Novus and 2 exptl. soft lining materials. Water uptake of 2 exptl. materials and Novus was determined from distilled water and two saline solns. (0.45 and 0.9 M). After 196 days, specimens were desorbed to constant weight and then subjected to a second sorption cycle. Novus had the highest uptake from distilled water at .apprx. 18%, the exptl. materials having an uptake .apprx. 7%. Desorptions were all rapid, min. weight being reached within 1-2 days. Uptakes of the second sorptions from water were all higher. Uptake from saline solns. was .apprx. 1-2% for all materials, uptake from 0.9 M saline being the lowest. Second sorption results from solution were similar to the first. The results obtained support the theory that the high water uptake of elastomeric materials is osmotically driven.
IT 90588-00-4, 1,3-Butadiene-ethylene glycol dimethacrylate-lauryl methacrylate-styrene copolymer
RL: PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(rubber; water uptake of soft lining materials from osmotic solns.)

RN 90588-00-4 HCAPLUS
 CN 2-Propenoic acid, 2-methyl-, 1,2-ethanediyl ester, polymer with 1,3-butadiene, dodecyl 2-methyl-2-propenoate and ethenylbenzene (9CI) (CA INDEX NAME)

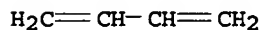
CM 1

CRN 142-90-5
 CMF C16 H30 O2



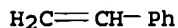
CM 2

CRN 106-99-0
 CMF C4 H6



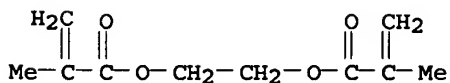
CM 3

CRN 100-42-5
 CMF C8 H8



CM 4

CRN 97-90-5
 CMF C10 H14 O4



CC 63-7 (Pharmaceuticals)
 IT Synthetic rubber, biological studies
 RL: PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
 (butadiene-ethylene glycol dimethacrylate-lauryl methacrylate-styrene; water uptake of soft lining materials from osmotic solns.)
 IT 90588-00-4, 1,3-Butadiene-ethylene glycol dimethacrylate-lauryl methacrylate-styrene copolymer
 RL: PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
 (rubber; water uptake of soft lining materials from

osmotic solns.)
 REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE
 FOR THIS RECORD. ALL CITATIONS AVAILABLE
 IN THE RE FORMAT

L121 ANSWER 14 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1997:361121 HCAPLUS
 DOCUMENT NUMBER: 127:18488
 TITLE: Manufacture methods for metal oxide/polymer
 composites with oxide gradient with
 good heat resistance, mech.
 properties, and adhesion
 INVENTOR(S): Haraguchi, Kazutoshi; Murata, Kazutaka; Ono,
 Yoshiuki
 PATENT ASSIGNEE(S): Dainippon Ink and Chemicals, Inc., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 24 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 09087526	A2	19970331	JP 1995-314030	1995 1201
JP 3603428	B2	20041222	JP 1995-179983	A 1995 0717

PRIORITY APPLN. INFO.:

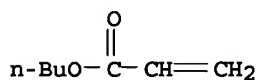
AB Title polymers are ≥ 1 polymers from polyamides, polyolefins, polyesters, PVC, acrylic resins, polyethylene copolymers, thermoplastic elastomers, polyacetal, fluoropolymers. The oxide gradient (with local ratio ≥ 1.5 of the maximum to the min. and continuously changed diameter) was produced by impregnation of polymers in (aqueous) solns. of alkoxides before uniformly distribution of the alkoxides, removal of partial alkoxides from the polymer, impregnation of the alkoxide-containing polymer in (aqueous) solution containing water/catalysts (basic or acidic) and solvents which can swell the polymer, followed by polymerization of alkoxides in vapor phase of the catalysts. Thus, nylon 6 (Ube nylon 1022B) was impregnated with MeOH/water solution at 80. degree. for 3 h to increase weight by 3% and then with tetramethoxysilane at 30° for 5 h; the impregnated sample was dried at room temperature for 5 h and then at 80° at vacuum for 24 h to give a nylon-silica composite with rapid decrease in silica concentration at distance 70-80 μm from the surface, maximum concentration 13% and min. concentration 0 at 20 μm from the surface, and uniformly distributed particles with diameter 10-30 μm .

IT 116661-33-7, Cleapact TI 300
 RL: TEM (Technical or engineered material use); USES (Uses)
 (manufacture methods for metal oxide/polymer composites with oxide gradient with good heat resistance, mech. properties, and adhesion)

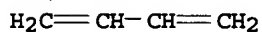
RN 116661-33-7 HCAPLUS
 CN 2-Propenoic acid, 2-methyl-, methyl ester, polymer with 1,3-butadiene, butyl 2-propenoate and ethenylbenzene, graft (9CI)

(CA INDEX NAME)

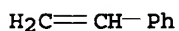
CM 1

CRN 141-32-2
CMF C7 H12 O2

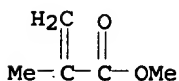
CM 2

CRN 106-99-0
CMF C4 H6

CM 3

CRN 100-42-5
CMF C8 H8

CM 4

CRN 80-62-6
CMF C5 H8 O2IC ICM C08L085-00
ICS C08L101-00CC 37-6 (Plastics Manufacture and Processing)
Section cross-reference(s): 40, 76ST metal oxide **gradient** polymer composite manuf; polyamide
metal alkoxide **gradient** composite; polyester alkoxide
gradient composite; acrylic resin alkoxide
gradient composite; polyacetal alkoxide **gradient**
composite; PVC alkoxide **gradient** composite heat
resistance; ethylene copolymer alkoxide **gradient**
composite; thermoplastic elastomer alkoxide
gradient composite; fluoropolymer alkoxide
gradient composite adhesion; tetramethoxysilane polymer
gradient composite mech; silica nylon 6 **gradient**
composite

IT Fluoropolymers, uses

RL: TEM (Technical or engineered material use); USES (Uses)

- (1000VLD; manufacture methods for metal oxide/polymer composites with oxide gradient with good heat resistance, mech. properties, and adhesion)
- IT Polyester rubber
RL: TEM (Technical or engineered material use); USES (Uses)
(Grilax E 500; manufacture methods for metal oxide/polymer composites with oxide gradient with good heat resistance, mech. properties, and adhesion)
- IT Polyesters, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(J 125; manufacture methods for metal oxide/polymer composites with oxide gradient with good heat resistance, mech. properties, and adhesion)
- IT Oxides (inorganic), uses
RL: MOA (Modifier or additive use); USES (Uses)
(manufacture methods for metal oxide/polymer composites with oxide gradient with good heat resistance, mech. properties, and adhesion)
- IT Metal alkoxides
RL: RCT (Reactant); RACT (Reactant or reagent)
(manufacture methods for metal oxide/polymer composites with oxide gradient with good heat resistance, mech. properties, and adhesion)
- IT Acrylic polymers, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(manufacture methods for metal oxide/polymer composites with oxide gradient with good heat resistance, mech. properties, and adhesion)
- IT Fluoropolymers, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(manufacture methods for metal oxide/polymer composites with oxide gradient with good heat resistance, mech. properties, and adhesion)
- IT Polyamides, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(manufacture methods for metal oxide/polymer composites with oxide gradient with good heat resistance, mech. properties, and adhesion)
- IT Polyamides, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(manufacture methods for metal oxide/polymer composites with oxide gradient with good heat resistance, mech. properties, and adhesion)
- IT Polyesters, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(manufacture methods for metal oxide/polymer composites with oxide gradient with good heat resistance, mech. properties, and adhesion)
- IT Polyolefins
RL: TEM (Technical or engineered material use); USES (Uses)
(manufacture methods for metal oxide/polymer composites with oxide gradient with good heat resistance, mech. properties, and adhesion)
- IT Thermoplastic rubber
RL: TEM (Technical or engineered material use); USES (Uses)
(manufacture methods for metal oxide/polymer composites with oxide gradient with good heat resistance, mech. properties, and adhesion)
- IT Acetals
RL: TEM (Technical or engineered material use); USES (Uses)
(polymers; manufacture methods for metal oxide/polymer composites with oxide gradient with good heat

resistance, mech. properties, and adhesion)
IT 24937-79-9, Poly(vinylidene fluoride)
RL: TEM (Technical or engineered material use); USES (Uses)
(1000VLD; manufacture methods for metal oxide/polymer composites
with oxide gradient with good heat
resistance, mech. properties, and adhesion)
IT 9011-14-7, Acrylite L
RL: TEM (Technical or engineered material use); USES (Uses)
(Acrylite L; manufacture methods for metal oxide/polymer composites
with oxide gradient with good heat
resistance, mech. properties, and adhesion)
IT 164325-42-2, Iupital F10
RL: TEM (Technical or engineered material use); USES (Uses)
(Iupital F10; manufacture methods for metal oxide/polymer composites
with oxide gradient with good heat
resistance, mech. properties, and adhesion)
IT 25038-59-9, J 125, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(J 125; manufacture methods for metal oxide/polymer composites with
oxide gradient with good heat resistance,
mech. properties, and adhesion)
IT 12002-26-5, MS 51
RL: RCT (Reactant); RACT (Reactant or reagent)
(MS 51 and MS 56; manufacture methods for metal oxide/polymer
composites with oxide gradient with good heat
resistance, mech. properties, and adhesion)
IT 26062-94-2, 1,4-Butanediol-terephthalic acid copolymer
RL: TEM (Technical or engineered material use); USES (Uses)
(Planac BT 128; manufacture methods for metal oxide/polymer
composites with oxide gradient with good heat
resistance, mech. properties, and adhesion)
IT 1332-29-2, Tin oxide 1344-28-1, Alumina, uses 7631-86-9,
Silica, uses 13463-67-7, Titania, uses
RL: MOA (Modifier or additive use); USES (Uses)
(manufacture methods for metal oxide/polymer composites with oxide
gradient with good heat resistance, mech.
properties, and adhesion)
IT 64-19-7, Acetic acid, uses 67-64-1, Acetone, uses 67-66-3,
Chloroform, uses 108-88-3, Toluene, uses 109-99-9, THF, uses
121-44-8, Triethylamine, uses 123-54-6, Acetyl acetone, uses
7647-01-0, Hydrochloric acid, uses 25322-20-7, Tetrachloroethane
RL: NUU (Other use, unclassified); USES (Uses)
(manufacture methods for metal oxide/polymer composites with oxide
gradient with good heat resistance, mech.
properties, and adhesion)
IT 555-31-7, Triisopropoxyaluminum 681-84-5, Tetramethoxysilane
3173-69-1, Tetraethoxytin 5593-70-4, Tetrabutoxytitanium
RL: RCT (Reactant); RACT (Reactant or reagent)
(manufacture methods for metal oxide/polymer composites with oxide
gradient with good heat resistance, mech.
properties, and adhesion)
IT 74-85-1D, Ethylene, copolymers 9002-86-2, PVC 9003-07-0, PY
240B 24968-12-5, Planac BT 128 25038-54-4, Ube nylon 1022B,
uses 32131-17-2, Nylon 66, uses 116661-33-7, Cleapact
TI 300
RL: TEM (Technical or engineered material use); USES (Uses)
(manufacture methods for metal oxide/polymer composites with oxide
gradient with good heat resistance, mech.
properties, and adhesion)
IT 67-56-1, Methanol, uses 7664-41-7, Ammonia, uses
RL: NUU (Other use, unclassified); USES (Uses)
(swelling agent; manufacture methods for metal oxide/polymer

composites with oxide gradient with good heat
resistance, mech. properties, and adhesion)

L121 ANSWER 15 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1997:340740 HCAPLUS
DOCUMENT NUMBER: 126:306138
TITLE: IR spectroscopic qualitative analysis of
plastics
INVENTOR(S): Kreuchwig, Lutz; Lucht, Hartmut
PATENT ASSIGNEE(S): LLA Umwelttechnische Analytik und Anlagen
GmbH, Germany
SOURCE: Ger., 11 pp.
CODEN: GWXXAW
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 19601950	C1	19970403	DE 1996-19601950	1996 0110
JP 3239784	B2	20011217	JP 1997-2694	1997 0110
PRIORITY APPLN. INFO.:			DE 1996-19601950	A 1996 0110

AB An unknown plastic is irradiated with IR light and the spectrum is measured with comparison to a known material in which the spectral gradient and/or the first part of the spectrum for a number of wavelength sections are determined and each gradient value is arranged in one of several normalized value ranges. The gradient values for the wavelength section of the measured spectrum is compared with those of the known material and the gradient coincidences and differences are used to relate the materials. Examples are given for PVC, polyethylene, polypropylene, polystyrene, and ABS polymer. The method may be used as an aid in plastics recycling.

IT 9003-56-9, ABS polymer
RL: ANT (Analyte); PRP (Properties); ANST (Analytical study)
(IR spectroscopic qual. anal. of plastics)
RN 9003-56-9 HCAPLUS
CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene
(9CI) (CA INDEX NAME)

CM 1

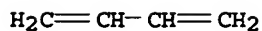
CRN 107-13-1
CMF C3 H3 N



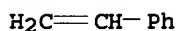
CM 2

CRN 106-99-0

CMF C4 H6



CM 3

CRN 100-42-5
CMF C8 H8

IC ICM G01N021-35
ICS G01N033-44; B07C005-342
CC 37-5 (Plastics Manufacture and Processing)
Section cross-reference(s): 38
IT Recycling of plastics and rubbers
(IR spectroscopic qual. anal. of plastics for)
IT 9002-86-2, PVC 9002-88-4, Polyethylene 9003-07-0,
Polypropylene 9003-53-6, Polystyrene 9003-56-9, ABS
polymer
RL: ANT (Analyte); PRP (Properties); ANST (Analytical study)
(IR spectroscopic qual. anal. of plastics)

L121 ANSWER 16 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1996:427417 HCAPLUS
DOCUMENT NUMBER: 125:144327
TITLE: Prediction of process-induced warpage in
injection molded thermoplastics
AUTHOR(S): Akay, M.; Ozden, S.; Tansey, Tony
CORPORATE SOURCE: School of Electrical and Mechanical Eng.,
Univ. Ulster at Jordanstown, County Antrim,
BT37 0QB, UK
SOURCE: Polymer Engineering and Science (1996),
36(13), 1839-1846
CODEN: PYESAZ; ISSN: 0032-3888
PUBLISHER: Society of Plastics Engineers
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The main cause of warpage in injection moldings is the imbalance of the thermal residual stresses that are caused by a nonuniform temperature distribution through the thickness of the moldings resulting from variation in cross sections, part geometries, and temperature difference between the mold surfaces. As the hot plastic melt is injected into the relatively cooler mold, a temperature gradient develops between the core of the molding and its surfaces, determining the magnitude of the residual stresses and warpage deflection. The relationship between the temperature difference of the two halves of the mold and warpage for a flat plate was measured and predicted by use of a finite element software package. The development of warpage in a 3D component (L-shaped bracket) was also measured, and the results were compared with computer predictions. The software correctly predicted the direction of the warpage deflection for Cyclocac 35 acrylonitrile-butadiene-styrene copolymer but not for Lexan 143R polycarbonate in L-shaped bracket moldings.

IT 9003-56-9, Cyclocac 35

RL: PEP (Physical, engineering or chemical process); PRP
(Properties); PROC (Process)
(prediction of process-induced warpage in injection-molded
thermoplastics using com. software package)

RN 9003-56-9 HCAPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene
(9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

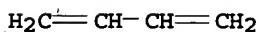
CMF C3 H3 N



CM 2

CRN 106-99-0

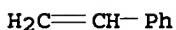
CMF C4 H6



CM 3

CRN 100-42-5

CMF C8 H8



CC 38-2 (Plastics Fabrication and Uses)

IT Molding of plastics and rubbers

(injection, prediction of process-induced warpage in
injection-molded thermoplastics using com. software package)

IT 9003-56-9, Cycolac 35 179987-27-0, Lexan 143R

RL: PEP (Physical, engineering or chemical process); PRP
(Properties); PROC (Process)

(prediction of process-induced warpage in injection-molded
thermoplastics using com. software package)

L121 ANSWER 17 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1994:246096 HCAPLUS

DOCUMENT NUMBER: 120:246096

TITLE: Manufacture of impact-resistant, glossy ABS
copolymers

INVENTOR(S): Dokukina, L. F.; Gavrichenkova, E. A.;
Rupyshev, V. G.; Grigoryan, E. V.; Annushkina,
S. G.

PATENT ASSIGNEE(S): USSR

SOURCE: U.S.S.R. From: Izobreteniya 1992, (43), 208.
CODEN: URXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Russian

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
SU 1593180	A1	19921123	SU 1988-4458430	1988 0711
PRIORITY APPLN. INFO.:			SU 1988-4458430	1988 0711

AB The title copolymers are manufactured by bulk copolymn. of styrene with acrylonitrile in the presence of butadiene rubber and a statistical butadiene-styrene diblock copolymer (I) (40-45% styrene) in a cascade of reactors operating with discrete temperature and monomer concentration gradients. I is introduced at a monomer conversion degree corresponding to a numeric value obtained by multiplying butadiene concentration in the starting solution with 1.00-1.45.

IT 106677-58-1P, Acrylonitrile-butadiene-styrene graft copolymer
 RL: IMF (Industrial manufacture); PREP (Preparation) (manufacture of, impact-resistant, with glossy surface)

RN 106677-58-1 HCAPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene, graft (9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

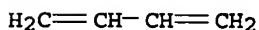
CMF C3 H3 N



CM 2

CRN 106-99-0

CMF C4 H6



CM 3

CRN 100-42-5

CMF C8 H8



IC ICM C08F279-04

CC 35-8 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 39

IT Rubber, butadiene, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)

(graft polymerization of styrene and acrylonitrile in presence of SBR)

block copolymer and, in manufacture of impact-resistant glossy ABS)

IT Rubber, butadiene-styrene, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (block, diblock, graft polymerization of styrene and acrylonitrile in presence of butadiene rubber and, in manufacture of impact-resistant glossy ABS)

IT Polymerization
 (graft, mass, of acrylonitrile and styrene in presence of SBR and butadiene rubber, in manufacture of impact-resistant glossy ABS)

IT 106677-58-1P, Acrylonitrile-butadiene-styrene graft copolymer
 RL: IMF (Industrial manufacture); PREP (Preparation)
 (manufacture of, impact-resistant, with glossy surface)

IT 106107-54-4 709030-54-6
 RL: USES (Uses)
 (rubber, block, diblock, graft polymerization of styrene and acrylonitrile in presence of butadiene rubber and, in manufacture of impact-resistant glossy ABS)

IT 9003-17-2
 RL: USES (Uses)
 (rubber, graft polymerization of styrene and acrylonitrile in presence of SBR block copolymer and, in manufacture of impact-resistant glossy ABS)

L121 ANSWER 18 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1994:78581 HCAPLUS

DOCUMENT NUMBER: 120:78581

TITLE: Linear copolyester containing phosphorous-containing moieties, its preparation, and its use as a flame-retardant additive

INVENTOR(S): Neri, Carlo; Landoni, Gianluigi

PATENT ASSIGNEE(S): Enichem Synthesis S.p.A., Italy

SOURCE: Eur. Pat. Appl., 8 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	
EP 547701	A2	19930623	EP 1992-203902	1992 1212
EP 547701	A3	19931013		
EP 547701	B1	19980805		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE				
AT 169315	E	19980815	AT 1992-203902	1992 1212
ES 2120986	T3	19981116	ES 1992-203902	1992 1212
CA 2085668	AA	19930619	CA 1992-2085668	1992 1217
JP 05331274	A2	19931214	JP 1992-337116	1992

US 5550207	A	19960827	US 1994-247525	1217
				1994
				0523
US 5602212	A	19970211	US 1996-653848	1996
				0528
PRIORITY APPLN. INFO.:		IT 1991-MI3399	A	1991
				1218
		US 1992-992591	B1	1992
				1218
		US 1994-247525	A3	1994
				0523

AB The polymer is prepared by polymerization of an aromatic dicarboxylic acid, C2-6 alkylene glycol and a carboxyphosphinic acid HO2CR1P(O)(OH)R2 [R1 = (cyclo)alkylene, R2 = C1-6 alkyl or Ph] to give a polymer with ≥ 2.5 wt% phosphorous content.

Thus, 2-methyl-1,2-oxaphospholan-5-one oxide and ethylene glycol (I) was reacted at 120-130°, excess I was distilled, and the product was reacted with poly(ethylene terephthalate) prepolymer containing Sb2O3 at 250-275° to give a copolyester with 4.29 % P, melting gradient 20.14 J/g and peak m.p. 177.8°. The products are useful as flame retardants during melt processing of polymers.

IT 9003-56-9, Abs resin

RL: USES (Uses)

(fireproofing additives for, containing melt-processable phosphorous-containing block copolyesters)

RN 9003-56-9 HCAPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

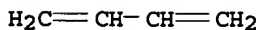
CMF C3 H3 N



CM 2

CRN 106-99-0

CMF C4 H6



CM 3

CRN 100-42-5

CMF C8 H8

H₂C=CH-Ph

IC ICM C08G063-692
ICS C08L067-02

CC 37-6 (Plastics Manufacture and Processing)

ST flame retardant phosphorous **contg** polyester;
polyethylene terephthalate fireproofing agent

IT Polyoxyphenylenes
Rubber, ethylene-propene
RL: USES (Uses)
(fireproofing additives for, **containing** melt-processable
phosphorous-**containing** block copolyesters)

IT Polyamides, miscellaneous
Polycarbonates, miscellaneous
RL: MSC (Miscellaneous)
(fireproofing additives for, **containing** melt-processable
phosphorous-**containing** block copolyesters)

IT Fireproofing agents
(phosphorous-**containing** block copolyesters,
melt-processable, for polymers)

IT Plastics, molded
RL: USES (Uses)
(polymer blends, fireproofing additives for, **containing**
melt-processable phosphorous-**containing** block
copolyesters)

IT Rubber, synthetic
RL: USES (Uses)
(EPDM, fireproofing additives for, **containing**
melt-processable phosphorous-**containing** block
copolyesters)

IT Rubber, synthetic
RL: USES (Uses)
(ethylene-vinyl acetate, fireproofing additives for,
containing melt-processable phosphorous-**containing**
block copolyesters)

IT Polyesters, uses
RL: USES (Uses)
(phosphinate group-**containing**, fireproofing additives
containing, melt-processable, for polymers)

IT Alkenes, polymers
RL: USES (Uses)
(α -, polymers, fireproofing additives for, **contg**
melt-processable phosphorous-**containing** block
copolyesters)

IT 152448-40-3 152448-41-4
RL: USES (Uses)
(fireproofing additives **containing**, melt-processable, for
polymers)

IT 9003-53-6, Polystyrene 9003-54-7, SAN (polymer)
9003-56-9, Abs resin 24937-78-8, Ethylene-vinyl acetate
copolymer 24968-12-5, Poly(butylene terephthalate) 25038-59-9,
Poly(ethylene terephthalate), miscellaneous 26062-94-2,
1,4-Butanediol-terephthalic acid copolymer
RL: USES (Uses)
(fireproofing additives for, **containing** melt-processable
phosphorous-**containing** block copolyesters)

IT 74-85-1
RL: USES (Uses)
(rubber, EPDM, fireproofing additives for,

containing melt-processable phosphorous-containing
block copolyesters)

IT 9010-79-1

RL: USES (Uses)

(rubber, fireproofing additives for, containing
melt-processable phosphorous-containing block
copolyesters)

L121 ANSWER 19 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1993:518860 HCAPLUS

DOCUMENT NUMBER: 119:118860

TITLE: Effect of shearing heat generation
in the capillary rheometer on the viscosity of
ABS polymer melt

AUTHOR(S): Nagai, Makoto; Jimma, Takashi

CORPORATE SOURCE: Nagaoka Coll. Technol., Nagaoka, 940, Japan

SOURCE: Sosei to Kako (1992), 33(380), 1074-9

CODEN: SOKAB9; ISSN: 0038-1586

DOCUMENT TYPE: Journal

LANGUAGE: Japanese

AB An anal. model and coordinate system for the title anal. are
presented. The anal was made for 5 assumptions; basic equations,
boundary conditions, and the calculating procedures were described. An
apparatus with the capillary nozzle of 0.5mm in diameter and 15 mm long
was operated with a screw plunger of an injection machine in order
to work at high shear rate of >105 s-1; the resin temps.
at inlet and outlet reservoir were measured. Exptl. and anal.
results on volumetric stroke, outlet temperature, mean shear
stress at capillary wall, temperature distribution, and
velocity gradient distribution are presented. Exptl.
and anal. data (obtained using independent viscosity model) for
shear stress and outlet temperature were in good agreement.
The results were interpreted in terms of retardation of viscosity
change. In case of in-mold high-shear-rate flow through long
runner and cavity, it was expected that the viscosity retardation
takes place and therefore the quant. estimation of relaxation
phenomenon is necessary.

IT 9003-56-9, ABS polymer

RL: USES (Uses)

(viscosity of melt of, effect of shearing heat
generation in capillary rheometer on)

RN 9003-56-9 HCAPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene
(9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

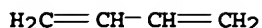
CMF C3 H3 N

$\text{H}_2\text{C}=\text{CH}-\text{C}\equiv\text{N}$

CM 2

CRN 106-99-0

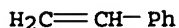
CMF C4 H6



CM 3

CRN 100-42-5

CMF C8 H8



- CC 38-2 (Plastics Fabrication and Uses)
 Section cross-reference(s): 37
- ST ABS polymer viscosity shearing heat; heat
 capillary rheometer viscosity ABS; injection molding ABS shearing
 heat
- IT Molding of plastics and rubbers
 (injection, of ABS polymer, effect of shearing heat
 generation in capillary rheometer on melt viscosity in relation
 to)
- IT 9003-56-9, ABS polymer
 RL: USES (Uses)
 (viscosity of melt of, effect of shearing heat
 generation in capillary rheometer on)

L121 ANSWER 20 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1992:153262 HCAPLUS

DOCUMENT NUMBER: 116:153262

TITLE: Formation and break-up of a bead-and-string
 structure during injection molding of a
 polycarbonate/acrylonitrile-butadiene-styrene
 blend

AUTHOR(S): Lee, M. P.; Hiltner, A.; Baer, E.

CORPORATE SOURCE: Cent. Appl. Polym. Res., Case West. Reserve
 Univ., Cleveland, OH, 44106, USASOURCE: Polymer (1992), 33(4), 675-84
 CODEN: POLMAG; ISSN: 0032-3861

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The morphol. gradient through the thickness of an
 injection-molded blend of 10:90 ABS resin-polycarbonate (PC) was
 characterized. Brittle fracture surfaces were etched and examined
 both parallel and perpendicular to the injection direction in the
 scanning electron microscope. In the center of the plaque, the
 morphol. was isotropic with the ABS phase dispersed in the PC
 matrix as large composite rubber particles .apprx.1
 μm in diameter and smaller particles of free SAN .apprx.0.3 μm
 in diameter. At about half the distance from the center to the edge,
 the morphol. of the free SAN phase changed from predominantly
 spherical to predominantly stringlike. The SAN strings connected
 the rubber particles to form an oriented ABS
 bead-and-string structure that was essentially continuous
 in the injection direction. The free SAN was highly extended
 under elongational or shear flow while remaining attached to the
 rubber particles because of miscibility with grafted SAN.
 The morphol. gradient through the thickness was created
 by the competition between the relaxation rate and the
 cooling rate after mold filling. In this case, relaxation
 was thought to occur by interfacial-tension-driven break-up and

X

end-pinching mechanisms to produce the dispersion of rubber and free SAN particles. Evidence to support the break-up mechanism was obtained when annealing above the glass transition temperature of PC for a matter of seconds, the time scale of mold cooling, caused the bead-and-string structure to convert to a dispersion of composite rubber particles and SAN particles.

IT 9003-56-9, ABS polymer

RL: USES (Uses)

(polycarbonate blends, morphol. of injection-molded, bead-and-string structure in)

RN 9003-56-9 HCAPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

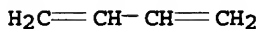
CMF C3 H3 N



CM 2

CRN 106-99-0

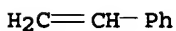
CMF C4 H6



CM 3

CRN 100-42-5

CMF C8 H8



CC 38-2 (Plastics Fabrication and Uses)

Section cross-reference(s): 37

IT Molding of plastics and rubbers

(injection, of polycarbonate-ABS resin blends, morphol. of, bead-and-string structure in)

IT 9003-56-9, ABS polymer

RL: USES (Uses)

(polycarbonate blends, morphol. of injection-molded, bead-and-string structure in)

L121 ANSWER 21 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1991:609591 HCAPLUS

DOCUMENT NUMBER: 115:209591

TITLE: The effect of the internal stresses on the dynamic mechanical properties of the injection molded products

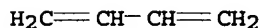
AUTHOR(S): Rohn, C.; Herh, P.

CORPORATE SOURCE: Rheometrics, Inc., Piscataway, NJ, 08854, USA

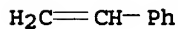
SOURCE: Muanyag es Gumi (1991), 28(6), 129-32
CODEN: MUGUAO; ISSN: 0027-2914
DOCUMENT TYPE: Journal
LANGUAGE: Hungarian
AB The temperature-dependent storage modulus and loss tangent are measured for polystyrene, polypropylene, HDPE, nylon 66, and ABS. The elastic stress (modulus), which forms as a result of temperature gradient and rheol. during injection molding of thermoplastic materials is dynamically determined. The loss tangent is especially sensitive to this stress, which is explained by the mobility and rearrangement of the chain structure.
IT 9003-56-9, ABS polymer
RL: USES (Uses)
(dynamic mech. properties of injection-molded, internal stress effect on)
RN 9003-56-9 HCAPLUS
CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene (9CI) (CA INDEX NAME)
CM 1
CRN 107-13-1
CMF C3 H3 N



CM 2
CRN 106-99-0
CMF C4 H6



CM 3
CRN 100-42-5
CMF C8 H8



CC 38-3 (Plastics Fabrication and Uses)
Section cross-reference(s): 37
IT Molding of plastics and rubbers
(injection, internal stress formation during, dynamic mech. properties in relation to)
IT 9003-07-0, Polypropylene 9003-53-6 9003-56-9, ABS polymer 32131-17-2, Nylon 66, properties
RL: USES (Uses)
(dynamic mech. properties of injection-molded, internal stress effect on)

L121 ANSWER 22 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1991:63673 HCAPLUS
DOCUMENT NUMBER: 114:63673

TITLE: Thermal contact resistance
in injection molding
AUTHOR(S): Yu, Chi J.; Sunderland, J. E.; Poli, C.
CORPORATE SOURCE: Dep. Mech. Eng., Univ. Massachusetts, Amherst,
MA, 01003, USA
SOURCE: Polymer Engineering and Science (1990),
30(24), 1599-606
CODEN: PYESAZ; ISSN: 0032-3888
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A method is described for obtaining the thermal contact resistance (TCR) between an injection molded thermoplastic part and its mold. Without TCR, the simulated cooling times obtained from POLYCOOL II, a computer-aided engineering (CAE) package for cooling simulation of injection molding, compared poorly with both field and exptl. data. An improvement in the accuracy of the simulated data resulted from making TCR an input to POLYCOOL II. TCR was obtained through a combination of exptl. and anal. procedures. Expts. were performed to obtain the part surface temperature distribution and the inside cavity pressure gradient. The part surface temperature distribution was then used as a boundary condition in thermal anal. The inside cavity pressure gradient was used as a basis for determining the inside cavity shrinkage. The results showed that, because of the thermal expansion of thermoplastics, the compressibility of the plastic melt, and the mold deformation, the inside cavity shrinkage was decreased as the thickness of the part was increased. Therefore, the TCR value of a thicker part was lower than that of a thinner part. The effects of both part thickness and process parameters, such as temperature and pressure, on TCR are also discussed.

IT 9003-56-9, Acrylonitrile-butadiene-styrene copolymer
RL: USES (Uses)

(injection molding of, cooling model for,
thermal contact resistance in)

RN 9003-56-9 HCAPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene
(9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

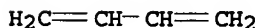
CMF C3 H3 N



CM 2

CRN 106-99-0

CMF C4 H6



CM 3

CRN 100-42-5
CMF C8 H8

H₂C=CH-Ph

CC 38-2 (Plastics Fabrication and Uses)
ST **thermal contact** resistance injection molding;
cooling model plastic injection molding; computer program
cooling model molding; surface **temp** distribution
plastic molding
IT Computer program
(for cooling simulation of injection molding of
plastics, **thermal contact** resistance effect
on accuracy of, POLYCOOL II)
IT **Cooling**
(in injection molding of plastic parts, model for,
thermal contact resistance in)
IT Process simulation, physicochemical
(of cooling in injection molding of plastics,
thermal contact resistance in)
IT **Thermal analysis**
(of injection molded plastic parts, surface **temperature**
distribution as boundary condition in)
IT **Surface**
(**temperature** distribution in, of injection molded plastic
parts, as boundary condition in **thermal anal.**)
IT **Thermal conductivity and conduction**
(through contact, in injection molding of plastics,
cooling model in relation to)
IT **Molding of plastics and rubbers**
(injection, of ABS, **thermal contact**
resistance in, cooling model in relation to)
IT **Molding apparatus for plastics and rubbers**
(injection molds, **thermal contact**
resistance between molded part and, cooling model in
relation to)
IT 9003-56-9, Acrylonitrile-butadiene-styrene copolymer
RL: **USES (Uses)**
(injection molding of, cooling model for,
thermal contact resistance in)

L121 ANSWER 23 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1989:58405 HCAPLUS

DOCUMENT NUMBER: 110:58405

TITLE: Changes in the structure of latex
particles by the incorporation of hydrophilic
comonomers

AUTHOR(S): Rahlwes, D.; Kranz, D.

CORPORATE SOURCE: Leverkusen, Fed. Rep. Ger.

SOURCE: Kautschuk Gummi Kunststoffe (1988), 41(7),
669-73

CODEN: KGUKAC; ISSN: 0022-9520

DOCUMENT TYPE: Journal

LANGUAGE: German

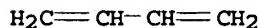
AB Incorporation of small amts. of hydrophilic comonomers in polymer
dispersions resulted in technol. changes which did not
significantly alter the geometry of the latex particle.
When higher levels of hydrophilic comonomers were added, a
significant change in particle structure and morphol. was observed
which depended on the polymerization process and the degree of

crosslinking. The latex particles and changes caused by the addition of hydrophilic monomers were analyzed by electron photomicrog., d. gradient ultracentrifuge techniques, and titrimetric methods. A model of the binder function in polymer dispersions, carboxylation of the shell of the particles, and changes in the particle geometry were discussed. The morphol. of the particle depended on the polymerization process.

IT 9010-93-9, Butadiene-methacrylic acid-styrene copolymer
RL: PRP (Properties)
(morphol. and geometry of particles of)
RN 9010-93-9 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, polymer with 1,3-butadiene and ethenylbenzene (9CI) (CA INDEX NAME)

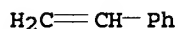
CM 1

CRN 106-99-0
CMF C4 H6



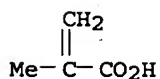
CM 2

CRN 100-42-5
CMF C8 H8



CM 3

CRN 79-41-4
CMF C4 H6 O2



CC 36-2 (Physical Properties of Synthetic High Polymers)
Section cross-reference(s): 35
IT 9010-92-8, Methacrylic acid-styrene copolymer 9010-93-9,
Butadiene-methacrylic acid-styrene copolymer 27341-67-9
RL: PRP (Properties)
(morphol. and geometry of particles of)

L121 ANSWER 24 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1989:24691 HCAPLUS
DOCUMENT NUMBER: 110:24691
TITLE: Effects of internal strains on injection-molded parts
AUTHOR(S): Rohn, Charles L.; Herh, Peter K. W.
CORPORATE SOURCE: Rheometrics, Inc., Piscataway, NJ, USA
SOURCE: Plastics Engineering (Brookfield, CT, United States) (1988), 44(10), 33-6
CODEN: PLEGBB; ISSN: 0091-9578

DOCUMENT TYPE: Journal
 LANGUAGE: English

AB Dynamic mech. tests were used to measure the elastic strains in injection-molded thermoplastics resulting from **thermal gradient** and flow orientation in injection molding. The $\tan \delta$ in the region of major transitions (e.g., glass transition) was particularly sensitive to elastic strains. Results for HDPE, ABS, polystyrene, polypropylene, and nylon 66 were shown.

IT 9003-56-9, ABS copolymer
 RL: USES (Uses)
 (elastic strain in injection-molded, dynamic mech. properties in relation to)

RN 9003-56-9 HCAPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene (9CI) (CA INDEX NAME)

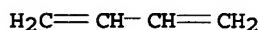
CM 1

CRN 107-13-1
 CMF C3 H3 N



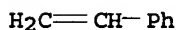
CM 2

CRN 106-99-0
 CMF C4 H6



CM 3

CRN 100-42-5
 CMF C8 H8



CC 37-5 (Plastics Manufacture and Processing)
 Section cross-reference(s): 38

IT Glass **temperature** and transition
 Mechanical loss
 (of injection-molded thermoplastics, elastic strains in relation to)

IT Molding of plastics and **rubbers**
 (injection, elastic strains in thermoplastics during, dynamic mech. properties in relation to)

IT 9003-07-0, Polypropylene 9003-53-6, Polystyrene
 9003-56-9, ABS copolymer 32131-17-2, Nylon 66, properties
 RL: USES (Uses)
 (elastic strain in injection-molded, dynamic mech. properties in relation to)

L121 ANSWER 25 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1987:441359 HCAPLUS
 DOCUMENT NUMBER: 107:41359
 TITLE: Composite moldings with gradually changing
 ingredient concentration
 INVENTOR(S): Sugata, Hiroyuki; Yuasa, Satoshi; Hamamoto,
 Takashi; Haruta, Masahiro; Mizusawa,
 Nobutoshi; Osabe, Kuniiji
 PATENT ASSIGNEE(S): Canon K. K., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 13 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 62070036	A2	19870331	JP 1985-210283	1985 0925
PRIORITY APPLN. INFO.:			JP 1985-210283	1985 0925

AB Composites with ≥ 2 ingredients with 1 ingredient gradually changing concentration toward ≥ 1 direction have an effective distribution of the specific ingredient. Thus, a suspension of PET polyester microsphere and a suspension of CrO₂ magnet particles were poured in a cylindrical filter and pressed to give a molding having higher magnet concentration on 1 side.

IT 9003-56-9, ABS polymer
 RL: USES (Uses)
 (powdered, microspheres, additive blends, for moldings with gradually changing additive concentration)

RN 9003-56-9 HCAPLUS
 CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene (9CI) (CA INDEX NAME)

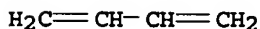
CM 1

CRN 107-13-1
 CMF C3 H3 N



CM 2

CRN 106-99-0
 CMF C4 H6



CM 3

CRN 100-42-5
CMF C8 H8

H₂C=CH-Ph

IC ICM B32B005-14
ICS B22D019-00; B22F003-02; C04B035-00; C22C001-05; C22C001-10;
C22C032-00; C22C033-02; C22C033-04
CC 38-3 (Plastics Fabrication and Uses)
Section cross-reference(s): 77
ST concn **gradient** multiingredient composite; PET
microsphere magnet particle composite; distribution
gradient ingredient magnetic composite
IT Acrylic polymers, uses and miscellaneous
Polyesters, uses and miscellaneous
Polysulfones, uses and miscellaneous
Rubber, silicone, uses and miscellaneous
RL: USES (Uses)
(microspheres, additive blends, for gradually changing concentration
composites)
IT 9003-56-9, ABS polymer
RL: USES (Uses)
(powdered, microspheres, additive blends, for moldings with
gradually changing additive concentration)

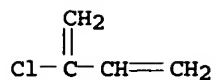
L121 ANSWER 26 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1986:628092 HCAPLUS
DOCUMENT NUMBER: 105:228092
TITLE: Control of the viscosity of
adhesives for the manufacture of semi-finished
fur products on a synthetic backing
AUTHOR(S): Anpilogova, A. A.; Esina, G. F.; Baramboim, N.
K.
CORPORATE SOURCE: MTILP, USSR
SOURCE: Kozhevenno-Obuvnaya Promyshlennost (1986),
(9), 49-51
CODEN: KOOPAJ; ISSN: 0023-4354
DOCUMENT TYPE: Journal
LANGUAGE: Russian

AB The viscosity (η) of LMMA-M [31291-98-2]
latex adhesive for bonding sheepskin fur to synthetic
backings was studied as a function of shear rate **gradient**
and pH. The η increased to a maximum of 57 mPa-s with
increasing pH of the latex to 9-10 by addition of
NH₄OH. An addnl. increase in η to 311 mPa-s was
attained by introduction of hydrolyzed polyacrylonitrile as a
thickening agent. The joint strength of fur with split leather
and fabrics was 21 and 18 N by bonding with LMMA-M adhesive.

IT 31291-98-2
RL: USES (Uses)
(latex, adhesive, for bonding fur to synthetic
backing, viscosity of, effect of pH and thickening agent on)
RN 31291-98-2 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, polymer with 2-chloro-1,3-butadiene
and methyl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

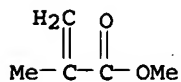
CM 1

CRN 126-99-8
CMF C4 H5 Cl



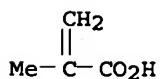
CM 2

CRN 80-62-6
CMF C5 H8 O2



CM 3

CRN 79-41-4
CMF C4 H6 O2



- CC 38-3 (Plastics Fabrication and Uses)
ST acrylic latex viscosity bonding fur; adhesive bonding fur
IT Thickening agents
(hydrolyzed polyacrylonitrile, for acrylic latex adhesives)
IT Adhesives
(latex-based, chloroprene-Me methacrylate-methacrylic acid copolymers, for bonding fur to synthetic backing, latex viscosity effect on)
IT Fur
(sheepskin, bonding of, with acrylic latex adhesives, viscosity effect on)
IT 31291-98-2
RL: USES (Uses)
(latex, adhesive, for bonding fur to synthetic backing, viscosity of, effect of pH and thickening agent on)
IT 25014-41-9D, hydrolyzed
RL: USES (Uses)
(thickening agents, for acrylic latex adhesives, viscosity in relation to)

L121 ANSWER 27 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1981:31387 HCAPLUS

DOCUMENT NUMBER: 94:31387

TITLE: Rapid density gradient
centrifugation of dispersed particles

AUTHOR(S): Lange, H.

CORPORATE SOURCE: Zentralber. Forsch. Entwickl., Bayer A.-G.,
Leverkusen, Fed. Rep. Ger.

SOURCE: Colloid and Polymer Science (1980), 258(9),

1077-85
CODEN: CPMSB6; ISSN: 0303-402X

DOCUMENT TYPE: Journal
LANGUAGE: German

AB The d. distribution (i.e., the distribution of the chemical composition of the particles) of dispersed particles, e.g., in polymer latexes, is determined in a few minutes by d.-gradient centrifugation in which a layer of a dispersion medium of low d. is added to a chemical similar medium of high d., e.g., H₂O to D₂O or 3-buten-2-ol [598-32-3] to HOCH₂CH₂OH [107-21-1], and the d. gradient is formed by diffusion. The method is especially useful for the determination of the chemical composition and heterogeneity of copolymer latexes and mixts. and the determination of particle crosslinking.

IT 9003-56-9

RL: USES (Uses)
(latex, d.-gradient centrifugation of)

RN 9003-56-9 HCAPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

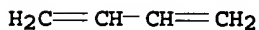
CMF C3 H3 N



CM 2

CRN 106-99-0

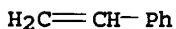
CMF C4 H6



CM 3

CRN 100-42-5

CMF C8 H8



CC 36-1 (Plastics Manufacture and Processing)

ST centrifugation density gradient particle; latex particle analysis centrifugation; solvent centrifugation gradient density; heterogeneity polymer latex centrifugation

IT Polymers, analysis

RL: ANST (Analytical study)
(latexes, heterogeneity determination of, by d.-gradient centrifugation)

IT Centrifugation

(d.-gradient, polymer latex heterogeneity determination by)

IT 9003-17-2 9003-20-7 9003-53-6 9003-55-8 9003-56-9
 24937-78-8
 RL: USES (Uses)
 (latex, d.-gradient centrifugation of)

IT 56-81-5, uses and miscellaneous 67-56-1, uses and miscellaneous
 107-21-1, uses and miscellaneous 598-32-3
 RL: USES (Uses)
 (solvent mixts. containing, for d.-gradient centrifugation)

IT 7789-20-0
 RL: USES (Uses)
 (water mixts., for d.-gradient centrifugation)

L121 ANSWER 28 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1979:153255 HCAPLUS
 DOCUMENT NUMBER: 90:153255
 TITLE: Ionically bonded filler-elastomer composites
 AUTHOR(S): Abbott, T. P.; James, C.; Otey, F. H.
 CORPORATE SOURCE: NRRC, ARS, Peoria, IL, USA
 SOURCE: Journal of Applied Polymer Science (1979),
 23(4), 1223-31
 CODEN: JAPNAB; ISSN: 0021-8995

DOCUMENT TYPE: Journal
 LANGUAGE: English

AB Carboxylic elastomers are insolubilized by interaction with starch containing basic or salt-forming groups, and this insolubilization is based on interactions that are primarily phys. absorption, but ionic salt formation between filler and elastomer probably occurs. Gel forms rapidly without heating by merely mixing and freeze-drying the basic starch and the carboxylic polymer; on mixing Cato 14 (OH form of a tertiary amine hydrochloride-modified starch) and Hycar 1570X19 latex, the mixture thickened rapidly and, in some cases, coagulated in very small particles. Severe shear mixing, such as hot rubber roll mixing for 20-30 min, tends to phase sep. the 2 components and decrease the gel content. Extruded or compression-molded filled composites are reprocessable.

IT 25265-19-4
 RL: USES (Uses)
 (rubber, fillers for, ionic-modified starch as)

RN 25265-19-4 HCAPLUS
 CN 2-Propenoic acid, polymer with 1,3-butadiene and 2-propenenitrile (9CI) (CA INDEX NAME)

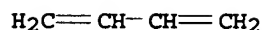
CM 1

CRN 107-13-1
 CMF C3 H3 N

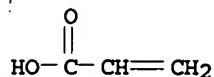
$\text{H}_2\text{C}=\text{CH}-\text{C}\equiv\text{N}$.

CM 2

CRN 106-99-0
 CMF C4 H6



CM 3

 CRN 79-10-7
 CMF C3 H4 O2


CC 38-9 (Elastomers, Including Natural Rubber)
 ST starch modified carboxylated rubber; filler ionic starch rubber
 IT Rubber, synthetic
 RL: USES (Uses)
 (acrylic acid-acrylonitrile-butadiene, fillers for, ionic-modified starch as)
 IT Rubber, synthetic
 RL: USES (Uses)
 (butadiene-styrene-vinylbenzenesulfonic acid, fillers for, ionic-modified starch as)
 IT 9005-25-8D, ionic derivs.
 RL: USES (Uses)
 (fillers, for carboxylated rubbers)
 IT 25265-19-4 69908-03-8
 RL: USES (Uses)
 (rubber, fillers for, ionic-modified starch as)

L121 ANSWER 29 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1979:138773 HCAPLUS
 DOCUMENT NUMBER: 90:138773
 TITLE: Textile fabric with leatherlike appearance
 INVENTOR(S): Hiers, John J.; Wald, Stephen A.
 PATENT ASSIGNEE(S): Scott Chatham, Co., USA
 SOURCE: U.S., 11 pp.
 CODEN: USXXAM
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 4132821	A	19790102	US 1977-835693	1977 0922
PRIORITY APPLN. INFO.:			US 1977-835693	A 1977 0922

AB Leather substitutes were prepared from a nonwoven needled fabric substrate by uniformly treating with a filler, differentially impregnating with a shape-sustaining immobilized polymeric composition such that >25% more polymer was between the face and center of the substrate than between the center and the back of the substrate, compacting to <75% original thickness, and adding a polymer skin

coat and optionally polished coats, colored toning coats, etc. Thus, a uniform web of loosely matted polyester fibers (1.5 denier and 1.5 in. crimp length, 18 oz/yd²) was carded onto a moving belt, needled to d. 6 lb/ft³, and impregnated with a filler based on alumina trihydrate and acrylic resins. The substrate with thickness 150-70 mils was treated with an acrylonitrile latex (Hycar latex 1571) by means of a heavy line gravure printer and dried to give a product with .apprx.100% more of the polymer between the face surface and the center than between the back surface and the center. The amount of filler in the substrate was .apprx.30 g/ft² and the amount of polymer was .apprx.15-20 g/ft². The substrate was calendered at 225-325° F under 400 lb/linear in. pressure to give a product with thickness 60-70 mils which was given a skin coat and top polish coat.

IT 9010-81-5

RL: USES (Uses)

(rubber, binders, gradiently dispersed in polyester fiber-based leather substitutes)

RN 9010-81-5 HCAPLUS

CM 2-Propenoic acid, 2-methyl-, polymer with 1,3-butadiene and 2-propenenitrile (9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

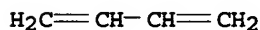
CMF C3 H3 N



CM 2

CRN 106-99-0

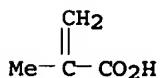
CMF C4 H6



CM 3

CRN 79-41-4

CMF C4 H6 O2



IC B32B005-16

INCL 428151000

CC 37-3 (Plastics Fabrication and Uses)

ST polyester fiber leather substitute; rubber binder leather substitute

IT Binding materials

(acrylonitrile-butadiene-methacrylic acid copolymer rubber, gradiently dispersed in polyester)

fiber-based leather substitutes)
 IT Polyester fibers, uses and miscellaneous
 RL: USES (Uses)
 (leather substitutes based on, with **gradiently**
dispersed rubber binder)
 IT Leather substitutes
 (polyester fiber-based, with **gradiently dispersed**
rubber binder)
 IT Rubber, synthetic
 RL: USES (Uses)
 (acrylonitrile-butadiene-methacrylic acid, binders,
gradiently dispersed in polyester fiber-based leather
 substitutes)
 IT 9010-81-5
 RL: USES (Uses)
 (rubber, binders, **gradiently dispersed** in
 polyester fiber-based leather substitutes)

L121 ANSWER 30 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1976:495369 HCAPLUS
 DOCUMENT NUMBER: 85:95369
 TITLE: Thermal treatment of polar
 dielectric parisons
 PATENT ASSIGNEE(S): American Can Co., USA
 SOURCE: Jpn. Kokai Tokkyo Koho, 11 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

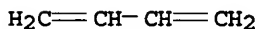
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 49129755	A2	19741212	JP 1973-137438	1973 1211
US 3786221	A	19740115	US 1973-346172	1973 0329
AU 7362017	A1	19750501	AU 1973-62017	1973 1031
FR 2223157	A1	19741025	FR 1973-39680	1973 1108
GB 1458824	A	19761215	GB 1973-57902	1973 1213
DE 2404772	A1	19741010	DE 1974-2404772	1974 0201
PRIORITY APPLN. INFO.:			US 1973-346172	A 1973 0329

AB A bottle having uniform orientation release stress and useful as a container for beer or carbonated beverages was prepared by heating a parison of acrylonitrile-butadiene-methyl acrylate copolymer [27012-62-0] between 2 concentric circular electrodes with high-frequency energy to form a temperature gradient and blowing.

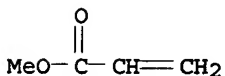
IT 27012-62-0
 RL: USES (Uses)
 (bottles, for beer and beverages)
 RN 27012-62-0 HCAPLUS
 CN 2-Propenoic acid, methyl ester, polymer with 1,3-butadiene and
 2-propenenitrile (9CI) (CA INDEX NAME)
 CM 1
 CRN 107-13-1
 CMF C3 H3 N



CM 2
 CRN 106-99-0
 CMF C4 H6



CM 3
 CRN 96-33-3
 CMF C4 H6 O2



CC 37-2 (Plastics Fabrication and Uses)
 IT Molding of plastics and rubbers
 (blow, of acrylonitrile-butyl acrylate-methyl acrylate
 copolymer, for bottles)
 IT 27012-62-0
 RL: USES (Uses)
 (bottles, for beer and beverages)

L121 ANSWER 31 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1974:553275 HCAPLUS

DOCUMENT NUMBER: 81:153275

TITLE: Effect of temperature on the
 coefficient of swelling of polymer melt
 ejected from a nozzle

AUTHOR(S): Evtimov, E.; Surbinova, Zh.

CORPORATE SOURCE: Bulg.

SOURCE: Polimeri (Sofia) (1972), 2, 15-30

CODEN: PSTNCL

DOCUMENT TYPE: Journal

LANGUAGE: Bulgarian

AB The coefficient of swelling of extruded polystyrene [9003-53-6],
 acrylonitrile-butadiene-styrene copolymer [9003-56-9],
 high- and low-d., polyethylene [9002-88-4], and polypropylene
 [9003-07-0] was determined at 170-220.deg.C by a capillary

viscometer and Brabender plastograph at various conventional gradients of shearing rate, .leq.425 g/cm2.sec.
The effect of the nozzle diameter (2.1-5 mm) on the coefficient of swelling was also examined

IT 9003-56-9
RL: USES (Uses)
(swelling coefficient of extruded, nozzle diameter effect on)
RN 9003-56-9 HCAPLUS
CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene
(9CI) (CA INDEX NAME)

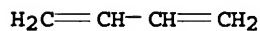
CM 1

CRN 107-13-1
CMF C3 H3 N



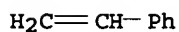
CM 2

CRN 106-99-0
CMF C4 H6



CM 3

CRN 100-42-5
CMF C8 H8



CC 36-5 (Plastics Manufacture and Processing)
IT Extrusion of plastics and rubbers
(swelling in, nozzle diameter effect on)
IT 9002-88-4 9003-07-0 9003-53-6 9003-56-9
RL: USES (Uses)
(swelling coefficient of extruded, nozzle diameter effect on)

L121 ANSWER 32 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1974:536924 HCAPLUS
DOCUMENT NUMBER: 81:136924
TITLE: Impact resistant thermoplastic resins
PATENT ASSIGNEE(S): Toray Industries, Inc.
SOURCE: Brit., 12 pp.
CODEN: BRXXAA
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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GB 1356685	A	19740612	GB 1971-57171	1971
				1209
JP 49026711	B4	19740711	JP 1970-108465	1970
				1209
JP 49002335	B4	19740119	JP 1970-108957	1970
				1210
PRIORITY APPLN. INFO.:		JP 1970-108465	A	1970
				1209
		JP 1970-108957	A	1970
				1210

AB Butadiene graft copolymers with good phys. properties were continuously manufactured by prepolymerizing a butadiene polymer or graft copolymer, a vinyl monomer, and H₂O, while evaporating and condensing some monomer and H₂O, discarding some of the H₂O and recycling the monomer and plug-flow advancing the mixture through a tower reactor with a temperature of 140.deg. at the inlet and 180-220.deg. at the outlet, while evaporating and condensing H₂O and monomer as in the 1st reactor. Thus, a mixture containing polybutadiene 17.3, acrylonitrile-butadiene-styrene graft copolymer (I) [9003-56-9] 7.2, styrene 47.5, acrylonitrile 19.0, and H₂O 9.0 weight % at 100.deg. was added to the 1st reactor at 110.deg. and 1.2 kg/cm² gage. With average retention time 4 hr, polymer content was 62%. The prepolymer was continuously fed to the 2nd reactor with uppermost wall section at 30.deg. to condense the monomer and H₂O and with a temperature gradient from 140.deg. at the inlet to 220.deg. at the outlet. During polymerization the pressure was 4 kg/cm² gage. With average residence time 4 hr conversion was 98%. After 24 hr I was extruded and cut into yellow-white pellets tensile strength at yield 440 kg/cm² and good impact strength 26 kgcm/cm notch.

IT 9003-56-9P 26098-47-5P
 RL: PREP (Preparation)
 (graft, continuous manufacture of)

RN 9003-56-9 HCAPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

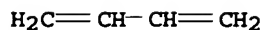
CMF C3 H3 N



CM 2

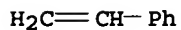
CRN 106-99-0

CMF C4 H6



CM 3

CRN 100-42-5
CMF C8 H8



RN 26098-47-5 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, methyl ester, polymer with
1,3-butadiene and 2-propenenitrile (9CI) (CA INDEX NAME)

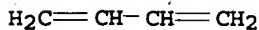
CM 1

CRN 107-13-1
CMF C3 H3 N



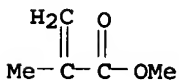
CM 2

CRN 106-99-0
CMF C4 H6



CM 3

CRN 80-62-6
CMF C5 H8 O2



IC C08F.
CC 36-3 (Plastics Manufacture and Processing)
ST butadiene graft copolymer; acrylonitrile butadiene styrene
polymer; methyl methacrylate butadiene copolymer; rubber
grafting
IT Polymerization
(graft, continuous, of vinyl compds. on butadiene
rubber)
IT 9003-56-9P 26098-47-5P
RL: PREP (Preparation)
(graft, continuous manufacture of)

L121 ANSWER 33 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1970:22243 HCAPLUS

DOCUMENT NUMBER: 72:22243
 TITLE: Thermoplastic polymer material based on
 crystalline poly(vinyl chloride)
 INVENTOR(S): Scarso, Luciano; Cerri, Egidio; Pezzin,
 Giovanni
 PATENT ASSIGNEE(S): Montecatini Edison S.p.A.
 SOURCE: Ger. Offen., 22 pp.
 CODEN: GWXXBX
 DOCUMENT TYPE: Patent
 LANGUAGE: German
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 1925741		19691127	DE	
FR 2011501			FR	
GB 1254041			GB	
US 3772409		19730000	US	
ZA 6903589		19690000	ZA	
PRIORITY APPLN. INFO.:			IT	

1968
0522

AB Thermoplastic polymer compns. based on highly crystalline poly-(vinyl chloride) (I) had high impact strength, workability, and heat distortion temperature. Thus, a composition contained crystalline I (of syndiotactic index 2.3) 80; an 11:29 CH₂:CHCN (II)- α -methylstyrene (III) emulsion copolymer (IV) 10; a 17:54:29 II-butadiene-styrene (V) terpolymer 10; a heat stabilizer mixture (A) 2.9; a lubricant mixture of Ca stearate and petroleum 1; and a TiO₂-CaCO₃ filler 5.3. A was a mixture of Ba-Cd stabilizer with Pb stearate and epoxyoctyl stearate. The ingredients were mixed for 15 min in a high-speed mixer at 100-10°, cooled with slower stirring for .apprx.15 min to 30-40. degree., and calendered on a roll mill at 185-200. degree. for 10 min to give specimens having Vicat temperature (ASTM-D-1525-58) 96°, Izod impact strength 5.3 kg-cm/cm at 23°, and melt viscosity 0.77 + 105 P (gradient γ = 100/sec), lower than that of I itself. Other preferred compns. contained a II-CH₂:CMeCO₂Me (VI) copolymer instead of IV or 2 of the following polymers with I: a 3:1 VI-V copolymer grafted on polybutadiene rubber and I grafted on an ethylene-propylene copolymer or on chlorinated polyethylene.

IT 25053-09-2, properties
 RL: PRP (Properties)
 (graft, vinyl chloride crystalline polymers containing, for improved mech. properties)

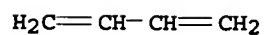
RN 25053-09-2 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, methyl ester, polymer with 1,3-butadiene and ethenylbenzene (9CI) (CA INDEX NAME)

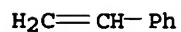
CM 1

CRN 106-99-0

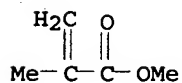
CMF C4 H6



CM 2

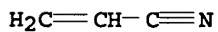
CRN 100-42-5
CMF C8 H8

CM 3

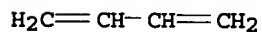
CRN 80-62-6
CMF C5 H8 O2

IT 9003-56-9, properties
 RL: PRP (Properties)
 (vinyl chloride crystalline polymers **containing**, for improved
 mech. properties)
 RN 9003-56-9 HCAPLUS
 CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene
 (9CI) (CA INDEX NAME)

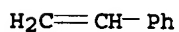
CM 1

CRN 107-13-1
CMF C3 H3 N

CM 2

CRN 106-99-0
CMF C4 H6

CM 3

CRN 100-42-5
CMF C8 H8

IC C08F
 CC 36 (Plastics Manufacture and Processing)
 IT 9002-88-4, properties
 RL: PRP (Properties)
 (chlorinated, vinyl chloride-grafted, vinyl chloride crystalline
 polymers containing, for improved mech. properties)
 IT 25053-09-2, properties 26007-02-3, properties
 RL: PRP (Properties)
 (graft, vinyl chloride crystalline polymers containing, for
 improved mech. properties)
 IT 25747-74-4
 RL: USES (Uses)
 (vinyl chloride crystalline polymers containing, for improved
 mech. properties)
 IT 9003-56-9, properties 25747-74-4, Acrylonitrile, polymer
 with α -methylstyrene, properties 30396-85-1, properties
 RL: PRP (Properties)
 (vinyl chloride crystalline polymers containing, for improved
 mech. properties)

L121 ANSWER 34 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1968:436772 HCAPLUS

DOCUMENT NUMBER: 69:36772

TITLE: Molding anisotropy in ABS (acrylonitrile-
 butadiene-styrene) polymers as revealed by
 electron microscopy

AUTHOR(S): Kato, Koichi

CORPORATE SOURCE: Cent. Res. Lab., Toyo Rayon Co. Ltd., Otsu,
 Japan

SOURCE: Polymer (1968), 9(5), 225-32

CODEN: POLMAG; ISSN: 0032-3861

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The OsO₄ procedure for light and electron microscopy was used to
 study the causes of delamination in thin-walled ABS injection
 moldings. Although mol. orientation reached a maximum in the
 delamination layer, the simple orientation of copolymer mols.
 could not account for the observed delamination. Phase anisotropy
 rather than mol. anisotropy accounted for the delamination of
 injection moldings. Rubber particles were arranged in
 rows, forming a laminar structure along the injection flow
 direction. In order to produce such a structure, it was necessary
 for the velocity gradient to exceed a certain limiting
 value which varied with both polymer composition and molding
 conditions. The rubber particles could be used as
 indicators for molding flow patterns.

IT 9003-56-9, uses and miscellaneous

RL: USES (Uses)

(delamination of moldings of, phase anisotropy in relation to)

RN 9003-56-9 HCAPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene
 (9CI) (CA INDEX NAME)

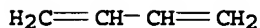
CM 1

CRN 107-13-1

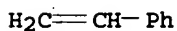
CMF C3 H3 N



CM 2

CRN 106-99-0
CMF C4 H6

CM 3

CRN 100-42-5
CMF C8 H8

CC 37 (Plastics Fabrication and Uses)
IT 9003-56-9, uses and miscellaneous
RL: USES (Uses)
(delamination of moldings of, phase anisotropy in relation to)

L121 ANSWER 35 OF 35 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1968:30467 HCAPLUS

DOCUMENT NUMBER: 68:30467

TITLE: Fracture processes in plastic-rubber blends. I. Temperature

dependencies of Charpy impact strengths

AUTHOR(S): Matsuo, Masato; Ueda, Akio; Kondo, Yoshio

CORPORATE SOURCE: Japan Geon Co., Kawasaki, Japan

SOURCE: Kobunshi Kagaku (1967), 24(264), 285-95

CODEN: KOKAAM; ISSN: 0023-2556

DOCUMENT TYPE: Journal

LANGUAGE: Japanese

AB. Several acrylonitrile-butadiene-styrene (ABS) resins and poly(vinyl chloride) (PVC) resins blended with rubbers of different chemical structures by roll-milling were fabricated into test pieces and their Charpy impact strengths determined from -196 degree. to somewhat above room temperature. The glass transition temps. Tg of these blended polymers were also determined from measurement of dynamic losses. The impact strengths of the test pieces were low below the Tg of the component rubber but began to increase at Tg and linear relationships were obtained in the plots of temperature vs. log impact strength. When PVC was blended with nonpolar rubbers, i.e., the miscibility of resin and rubber was poor, the structure by microscopy was clearly inhomogeneous and the rate of increase of the impact strengths above Tg was relatively low, maximum rate of increase being obtained at a certain blending ratio of the resin and the rubber. In contrast, when PVC was blended with rubbers of high polarity, the Tg of the rubbers disappeared and shifts were observed in the Tg of PVC to lower temperature. The temperature dependencies of impact strengths were compared for 2 types of ABS resins, one of which was prepared by graft copolymn. of acrylonitrile and styrene in polybutadiene latex and another of which by blending of acrylonitrile-styrene copolymer with polybutadiene latex. The temperature gradient of the impact strength

of the former was much larger than that of the latter. This fact is explained as evidence that the adhesive power between the rubber and the resin plays an important role in the fracture process of the blends. Fracture by impact should be understood as a kinetic process accompanied by the plastic deformation of the samples, as is suggested by the temperature dependencies of the impact strengths which are expressed by the following equation of the same form as the Arrhenius equation: $I = A \exp(-B/T)$, where I is the impact strength, A and B are consts., and T is the absolute temperature

IT 9003-56-9, properties
 RL: PRP (Properties)
 (graft, impact strength and dynamic losses of)
 RN 9003-56-9 HCAPLUS
 CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene
 (9CI) (CA INDEX NAME)

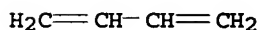
CM 1

CRN 107-13-1
 CMF C3 H3 N



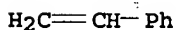
CM 2

CRN 106-99-0
 CMF C4 H6



CM 3

CRN 100-42-5
 CMF C8 H8



RL: PRP (Properties)
 (impact strength and dynamic losses of synthetic rubber and
 CC 36 (Plastics Manufacture and Processing)
 IT Rubber, ethylene-propene
 (chlorinated, chloroethylene polymers containing, impact strength and dynamic losses of)
 IT Rubber, butadiene-styrene, properties
 Rubber, ethylene-propene
 Rubber, nitrile, properties
 (chloroethylene polymers containing, impact strength and dynamic losses of)
 IT Rubber, synthetic
 (impact strength and dynamic losses of synthetic rubber and)
 IT Glass temperature

(of plastic-synthetic rubber mixts.)

IT 9003-56-9, properties
 RL: PRP (Properties)
 (graft, impact strength and dynamic losses of)

IT 9003-56-9, properties
 RL: PRP (Properties)
 (impact strength and dynamic losses of synthetic rubber and)

IT 9003-17-2, properties
 RL: PRP (Properties)
 (of cis-1,4-configuration, chloroethylene polymers containing, impact strength and dynamic losses of)

IT 9002-86-2, properties
 RL: PRP (Properties)
 (rubber (synthetic) containing, impact strength and dynamic losses of)

IT 9003-55-8
 (rubber, butadiene-styrene; chloroethylene polymers containing, impact strength and dynamic losses of)

IT 9010-79-1
 (rubber, ethylene-propene; chloroethylene polymers containing, impact strength and dynamic losses of)

IT 9003-18-3
 (rubber, nitrile; chloroethylene polymers containing, impact strength and dynamic losses of)

=> => d que stat l122

L4 STR

C=C

1 2

NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 2

STEREO ATTRIBUTES: NONE

L5 STR

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DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

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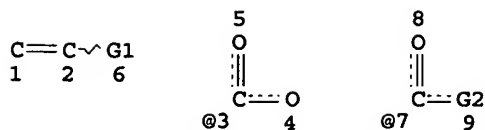
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L7 SCR 2043

L23 STR



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VAR G2=N/CN

NODE ATTRIBUTES:

CONNECT IS E1 RC AT 5

CONNECT IS E1 RC AT 8

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 9

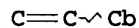
STEREO ATTRIBUTES: NONE

L24 SCR 2077

L26 8354 SEA FILE=REGISTRY SSS FUL L4 AND L5 AND L23 AND L7 AND

L24

L27 STR



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NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

GGCAT IS UNS AT 3

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GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 3

STEREO ATTRIBUTES: NONE

L29 5043 SEA FILE=REGISTRY SUB=L26 SSS FUL (L27 AND L5 AND L23)

L30 18545 SEA FILE=REGISTRY ABB=ON PLU=ON 107-13-1/CRN

L31 58027 SEA FILE=REGISTRY ABB=ON PLU=ON 79-10-7/CRN

L32 13864 SEA FILE=REGISTRY ABB=ON PLU=ON 79-06-1/CRN

L33 44757 SEA FILE=REGISTRY ABB=ON PLU=ON 79-41-4/CRN

L34 5511 SEA FILE=REGISTRY ABB=ON PLU=ON 97-65-4/CRN

L35 10015 SEA FILE=REGISTRY ABB=ON PLU=ON 106-99-0/CRN

L36 71546 SEA FILE=REGISTRY ABB=ON PLU=ON 100-42-5/CRN

L37 3042 SEA FILE=REGISTRY ABB=ON PLU=ON ((L30 OR L31 OR L32 OR L33 OR L34)) AND L35 AND L36

L41 464105 SEA FILE=HCAPLUS ABB=ON PLU=ON LATEX? OR RUBBER? OR ELASTOMER?

L43 5 SEA FILE=REGISTRY ABB=ON PLU=ON 113974-98-4/CRN

L44 2101 SEA FILE=REGISTRY ABB=ON PLU=ON L26 AND 3/NC

L45 2247 SEA FILE=REGISTRY ABB=ON PLU=ON L26 AND 4/NC

L46 724 SEA FILE=REGISTRY ABB=ON PLU=ON L29 AND 3/NC

L47 1268 SEA FILE=REGISTRY ABB=ON PLU=ON L29 AND 4/NC

L48 27 SEA FILE=REGISTRY ABB=ON PLU=ON L37 AND 3/NC

L49 595 SEA FILE=REGISTRY ABB=ON PLU=ON L37 AND 4/NC

L50 1 SEA FILE=REGISTRY ABB=ON PLU=ON 114464-60-7/RN

L51 3 SEA FILE=HCAPLUS ABB=ON PLU=ON L50

L52 3 SEA FILE=HCAPLUS ABB=ON PLU=ON L43

L53 30514 SEA FILE=HCAPLUS ABB=ON PLU=ON L44

L54 27642 SEA FILE=HCAPLUS ABB=ON PLU=ON L46
 L55 24591 SEA FILE=HCAPLUS ABB=ON PLU=ON L48
 L56 4674 SEA FILE=HCAPLUS ABB=ON PLU=ON L45
 L57 3895 SEA FILE=HCAPLUS ABB=ON PLU=ON L47
 L58 2954 SEA FILE=HCAPLUS ABB=ON PLU=ON L49
 L59 33121 SEA FILE=HCAPLUS ABB=ON PLU=ON (L53 OR L54 OR L55 OR
 L56 OR L57 OR L58)
 L68 98 SEA FILE=HCAPLUS ABB=ON PLU=ON GRADIENT? (2A) REGIM?
 L70 227427 SEA FILE=HCAPLUS ABB=ON PLU=ON GRADIENT?
 L72 17586 SEA FILE=HCAPLUS ABB=ON PLU=ON COMPONENT? (3A) (INCREAS
 ? OR DECREAS?)
 L74 70532 SEA FILE=HCAPLUS ABB=ON PLU=ON LATEX?
 L76 30514 SEA FILE=HCAPLUS ABB=ON PLU=ON (L53 OR L54 OR L55)
 L77 3462 SEA FILE=HCAPLUS ABB=ON PLU=ON L76 AND L74
 L79 7 SEA FILE=HCAPLUS ABB=ON PLU=ON L77 AND L70
 L80 1 SEA FILE=HCAPLUS ABB=ON PLU=ON L59 AND L68
 L81 59 SEA FILE=HCAPLUS ABB=ON PLU=ON L59 AND L70
 L82 34 SEA FILE=HCAPLUS ABB=ON PLU=ON L81 AND L41
 L83 8 SEA FILE=HCAPLUS ABB=ON PLU=ON L82 AND L74
 L85 2 SEA FILE=HCAPLUS ABB=ON PLU=ON L77 AND L72
 L86 4154 SEA FILE=HCAPLUS ABB=ON PLU=ON L59 AND (INCR? OR
 DECR? OR CONTINU?)
 L87 1411 SEA FILE=HCAPLUS ABB=ON PLU=ON L86 AND (TIME? OR
 SEC# OR SECOND? OR MIN# OR MINUTE# OR HOUR# OR HR#)
 L88 1073 SEA FILE=HCAPLUS ABB=ON PLU=ON L87 AND (TEMP# OR
 TEMPERATURE# OR HEAT? OR THERMAL? OR DEG# OR DEGREE#
 OR CENTIGRAD? OR CELSIUS? OR FAHRENHEIT? OR KELVIN? OR
 COOL? OR FREEZ? OR FROZ? OR CHILL?)
 L89 5 SEA FILE=HCAPLUS ABB=ON PLU=ON L88 AND L70
 L90 29 SEA FILE=HCAPLUS ABB=ON PLU=ON L81 AND (INCR? OR
 DECR? OR CONT?)
 L91 15 SEA FILE=HCAPLUS ABB=ON PLU=ON L81 AND (TIME? OR
 SEC# OR SECOND? OR MIN# OR MINUTE# OR HOUR# OR HR#)
 L92 37 SEA FILE=HCAPLUS ABB=ON PLU=ON L81 AND (TEMP# OR
 TEMPERATURE# OR HEAT? OR THERMAL? OR DEG# OR DEGREE#
 OR CENTIGRAD? OR CELSIUS? OR FAHRENHEIT? OR KELVIN? OR
 COOL? OR FREEZ? OR FROZ? OR CHILL?)
 L97 61 SEA FILE=HCAPLUS ABB=ON PLU=ON (L79 OR L80 OR L81 OR
 L82 OR L83) OR L85
 L98 46 SEA FILE=HCAPLUS ABB=ON PLU=ON (L89 OR L90 OR L91 OR
 L92)
 L99 61 SEA FILE=HCAPLUS ABB=ON PLU=ON L97 OR L98
 L101 5 SEA FILE=HCAPLUS ABB=ON PLU=ON L99 AND COAT?
 L102 61 SEA FILE=HCAPLUS ABB=ON PLU=ON L99 OR L101
 L103 3 SEA FILE=HCAPLUS ABB=ON PLU=ON L51 OR L52
 L104 63 SEA FILE=HCAPLUS ABB=ON PLU=ON L103 OR L102
 L106 8 SEA FILE=HCAPLUS ABB=ON PLU=ON L104 AND (WEIGHT? OR
 WT? OR PERCENT? OR PER(W)CENT? OR PCT?)
 L107 9 SEA FILE=HCAPLUS ABB=ON PLU=ON L104 AND COMPONENT?
 L108 63 SEA FILE=HCAPLUS ABB=ON PLU=ON L104 OR L106 OR L107
 L109 2 SEA FILE=HCAPLUS ABB=ON PLU=ON L108 AND MOLAR?
 L110 63 SEA FILE=HCAPLUS ABB=ON PLU=ON L108 OR L109
 L111 4 SEA FILE=HCAPLUS ABB=ON PLU=ON L57 AND L70
 L112 4 SEA FILE=HCAPLUS ABB=ON PLU=ON L110 OR L111
 L113 63 SEA FILE=HCAPLUS ABB=ON PLU=ON L110 OR L111 OR L112
 L115 7724 SEA FILE=HCAPLUS ABB=ON PLU=ON COATINGS/CT
 L116 123267 SEA FILE=HCAPLUS ABB=ON PLU=ON "COATING PROCESS"/CT
 L117 268501 SEA FILE=HCAPLUS ABB=ON PLU=ON COATING MATERIALS/CT
 L118 2 SEA FILE=HCAPLUS ABB=ON PLU=ON L113 AND ((L115 OR
 L116 OR L117))
 L119 63 SEA FILE=HCAPLUS ABB=ON PLU=ON L118 OR L113
 L120 60 SEA FILE=HCAPLUS ABB=ON PLU=ON L119 NOT L103

L121 35 SEA FILE=HCAPLUS ABB=ON PLU=ON L120 AND L41
L122 25 SEA FILE=HCAPLUS ABB=ON PLU=ON L120 NOT L121

=> d 1122 1-25 ibib abs hitstr hitind

L122 ANSWER 1 OF 25 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2005:160215 HCAPLUS
DOCUMENT NUMBER: 142:248870
TITLE: Heat-developable photographic
material with uppermost layer
containing binder not from animal
protein
INVENTOR(S): Suzuki, Keiichi; Tsukada, Yoshihisa
PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 114 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2005049371	A2	20050224	JP 2003-202771	2003 0729
PRIORITY APPLN. INFO.: JP 2003-202771				2003 0729

AB The material; with average gradient <10 in the characteristic curve (D-logE curve), comprises a support coated with an image forming layer containing photosensitive Ag halide, non-photosensitive organic Ag salt, a reducing agent, and a binder, and an nonphotosensitive layer, in which the uppermost layer comprises a binder containing ≥ 50 weight% which is not from animal protein and a crosslinking agent. The material gives images with good antiblocking property and storage stability under dark and hot environment.

IT 845265-16-9P, Acrylic acid-butadiene-Duranate WB 40-100-styrene copolymer 845265-17-0P, Acrylic acid-1,3-butadiene-Dicfine EM 60-styrene copolymer 845265-18-1P, Acrylic acid-1,3-butadiene-Duranate WB 40-80D-styrene copolymer 845265-19-2P, Acrylic acid-1,3-butadiene-Duranate WT 30-100-styrene copolymer 845265-20-5P, Acrylic acid-Burnock CR 60N-1,3-butadiene-styrene copolymer 845644-86-2P, Acrylic acid-1,3-butadiene-Duranate WT 20-100-styrene copolymer
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(heat-developable photog. material with uppermost layer containing binder not from animal protein).

RN 845265-16-9 HCAPLUS
CN 2-Propenoic acid, polymer with 1,3-butadiene, Duranate WB 40-100 and ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

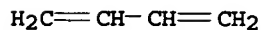
CRN 203743-05-9

CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

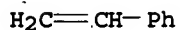
CM 2

CRN 106-99-0
CMF C4 H6



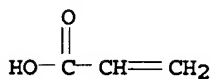
CM 3

CRN 100-42-5
CMF C8 H8



CM 4

CRN 79-10-7
CMF C3 H4 O2



RN 845265-17-0 HCAPLUS

CN 2-Propenoic acid, polymer with 1,3-butadiene, Dicfine EM 60 and
ethenylbenzene (9CI) (CA INDEX NAME)

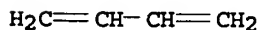
CM 1

CRN 165168-86-5
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

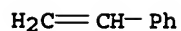
CM 2

CRN 106-99-0
CMF C4 H6

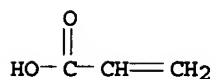


CM 3

CRN 100-42-5
CMF C8 H8



CM 4

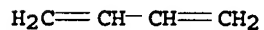
CRN 79-10-7
CMF C3 H4 O2RN 845265-18-1 HCAPLUS
CN 2-Propenoic acid, polymer with 1,3-butadiene, Duranate WB 40-80D
and ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 203743-06-0
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

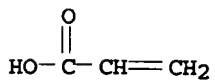
CM 2

CRN 106-99-0
CMF C4 H6

CM 3

CRN 100-42-5
CMF C8 H8

CM 4

CRN 79-10-7
CMF C3 H4 O2RN 845265-19-2 HCAPLUS
CN 2-Propenoic acid, polymer with 1,3-butadiene, Duranate WT 30-100

and ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 644967-27-1

CMF Unspecified

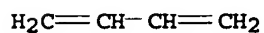
CCI MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 106-99-0

CMF C4 H6



CM 3

CRN 100-42-5

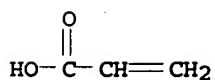
CMF C8 H8



CM 4

CRN 79-10-7

CMF C3 H4 O2



RN 845265-20-5 HCAPLUS

CN 2-Propenoic acid, polymer with Burnock CR 60N, 1,3-butadiene and ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 145379-20-0

CMF Unspecified

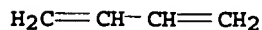
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

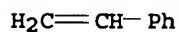
CRN 106-99-0

CMF C4 H6



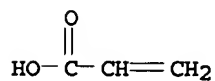
CM 3

CRN 100-42-5
CMF C8 H8



CM 4

CRN 79-10-7
CMF C3 H4 O2



RN 845644-86-2 HCAPLUS
CN 2-Propenoic acid, polymer with 1,3-butadiene, Duranate WT 20-100
and ethenylbenzene (9CI) (CA INDEX NAME)

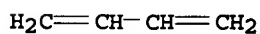
CM 1

CRN 845644-44-2
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

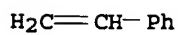
CM 2

CRN 106-99-0
CMF C4 H6



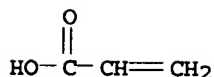
CM 3

CRN 100-42-5
CMF C8 H8



CM 4

CRN 79-10-7
CMF C3 H4 O2



- IC ICM G03C001-498
 CC 74-2 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 ST heat developable photog material uppermost layer
 crosslinked polymer binder
 IT Photographic films
 (heat-developable photog. material with uppermost layer containing binder not from animal protein)
 IT Polyurethanes, preparation
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (heat-developable photog. material with uppermost layer containing binder not from animal protein)
 IT 243843-53-0 500572-61-2
 RL: TEM (Technical or engineered material use); USES (Uses)
 (development accelerator; heat-developable photog. material with uppermost layer containing binder not from animal protein)
 IT 122463-72-3, Poval 205
 RL: TEM (Technical or engineered material use); USES (Uses)
 (gelled, protective layer; heat-developable photog. material with uppermost layer containing binder not from animal protein)
 IT 9000-40-2, Locust bean gum 9005-38-3, Sodium alginate 9049-34-7, Low-methoxyl pectin 11114-20-8, κ-Carrageenan
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (gelling agent, protective layer containing; heat-developable photog. material with uppermost layer containing binder not from animal protein)
 IT 845265-10-3P, Duranate WB 40-100-Poal KL 318 copolymer
 845265-12-5P, Duranate WB 40-80D-Poal KL 318 copolymer
 845265-13-6P, Duranate WT 30-100-Poal KL 318 copolymer
 845265-14-7P, Dicfine EM 60-Poal KL 318 copolymer 845265-15-8P, Duranate WB 40-100-Jurymer AC 103-Poal 205 copolymer
 845265-16-9P, Acrylic acid-butadiene-Duranate WB 40-100-styrene copolymer 845265-17-0P, Acrylic acid-1,3-butadiene-Dicfine EM 60-styrene copolymer
 845265-18-1P, Acrylic acid-1,3-butadiene-Duranate WB 40-80D-styrene copolymer 845265-19-2P, Acrylic acid-1,3-butadiene-Duranate WT 30-100-styrene copolymer
 845265-20-5P, Acrylic acid-Burnock CR 60N-1,3-butadiene-styrene copolymer 845265-21-6P, Acrylic acid-butyl acrylate-Duranate WB 40-100-methyl methacrylate copolymer
 845274-06-8P, Carboxymethylcellulose sodium salt-Duranate WB 40-100 copolymer 845644-85-1P, Duranate WT 20-100-Poal KL 318 copolymer 845644-86-2P, Acrylic acid-1,3-butadiene-Duranate WT 20-100-styrene copolymer
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (heat-developable photog. material with uppermost layer containing binder not from animal protein)

L122 ANSWER 2 OF 25 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 2004:757738 HCAPLUS
 DOCUMENT NUMBER: 142:374356

TITLE: 1D and 2D electron spin resonance imaging
(ESRI) of transport and degradation processes
in polymers
AUTHOR(S): Motyakin, Mikhail V.; Schlick, Shulamith
CORPORATE SOURCE: Department of Chemistry, University of Detroit
Mercy, Detroit, MI, 49219-0900, USA
SOURCE: Biological Magnetic Resonance (2004), 21(EPR:
Instrumental Methods), 349-384
CODEN: BMGRDB; ISSN: 0192-6020
PUBLISHER: Kluwer Academic/Plenum Publishers
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English

AB A review describes the ESR spectra in the presence of magnetic
field gradients, and presents the hardware necessary for
ESR imaging (ESRI), and the data needed and collected in
one-dimensional (1D) and 2D spectral-spatial ESRI. It discusses
the application of ESRI for the elucidation of the degradation and
stabilization of a copolymer, poly(acrylonitrile-co-butadiene-co-
styrene).
IT 9003-56-9, Abs polymer
RL: PRP (Properties)
(model compound; ESR imaging of transport and degradation processes
in polymers)
RN 9003-56-9 HCAPLUS
CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene
(9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

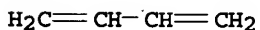
CMF C3 H3 N



CM 2

CRN 106-99-0

CMF C4 H6



CM 3

CRN 100-42-5

CMF C8 H8



CC 36-0 (Physical Properties of Synthetic High Polymers)

IT 9003-56-9, Abs polymer

RL: PRP (Properties)

(model compound; ESR imaging of transport and degradation processes
in polymers)

REFERENCE COUNT: 87 THERE ARE 87 CITED REFERENCES AVAILABLE

FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L122 ANSWER 3 OF 25 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2003:460071 HCAPLUS

DOCUMENT NUMBER: 139:308241

TITLE: Study on ABS alloy with permanent
antistatativityAUTHOR(S): Chen, Er-fan; Zhao, Chang-li; Cheng, Yuan-jie;
Zhou, BenlianCORPORATE SOURCE: Department of Polymer Materials and
Engineering, Shenyang Institute of Chemical
Technology, Shenyang, 110021, Peop. Rep. ChinaSOURCE: Gaofenzi Cailiao Kexue Yu Gongcheng (2003),
19(3), 137-140

CODEN: GCKGEI; ISSN: 1000-7555

PUBLISHER: Gaofenzi Cailiao Kexue Yu Gongcheng Bianjibu

DOCUMENT TYPE: Journal

LANGUAGE: Chinese

AB This paper deals with the mech. properties, antistatativity, and
morphol. of the ABS alloys, which were prepared with amphiphilic
copolymer, constituted of quaternary ammonium alkyl salt monomer
of dimethylaminoethyl methacrylate and styrene. The results show
that the mech. properties of ABS alloys are the same as those of
ABS resin, but the alloys have significant permanent
antistatativity; the ionic quaternary ammonium alkyl salt unit plays
a role in the charge conduction; the critical volume fraction of charge
conducting network is 0.05; micro-phase separation structure and concentration
gradient of the copolymer are observed in the alloys by SEM,
in which the network distribution is on the surface of the alloy
and the bullet distribution is in the interior.

IT 9003-56-9, PA 757

RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)
(HF 660; study on ABS alloy with permanent antistatativity)

RN 9003-56-9 HCAPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene
(9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

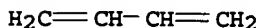
CMF C3 H3 N



CM 2

CRN 106-99-0

CMF C4 H6



CM 3

CRN 100-42-5

CMF C8 H8

H₂C=CH-Ph

CC 37-5 (Plastics Manufacture and Processing)
IT 9003-56-9, PA 757
RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)
(HF 660; study on ABS alloy with permanent antistatitivity)

L122 ANSWER 4 OF 25 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2003:223634 HCAPLUS

DOCUMENT NUMBER: 138:388406

TITLE: Assessment of volatile organic compound emissions from ecosystems of China

AUTHOR(S): Klinger, L. F.; Li, Q.-J.; Guenther, A. B.; Greenberg, J. P.; Baker, B.; Bai, J.-H.

CORPORATE SOURCE: Atmospheric Chemistry Division, National Center for Atmospheric Research, Boulder, CO, USA

SOURCE: Journal of Geophysical Research, [Atmospheres] (2002), 107(D21), ACH16/1-ACH16/21
CODEN: JGRDE3; ISSN: 0148-0227

PUBLISHER: American Geophysical Union

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Isoprene, monoterpene, and other volatile organic compound (VOC) emissions from grasslands, shrublands, forests, and peatlands in China were characterized to estimate their regional magnitudes and to compare these emissions with those from landscapes of North America, Europe, and Africa. Ecol. and VOC emission sampling was conducted at 52 sites centered in and around major research stations located in seven different regions of China: Inner Mongolia (temperate), Changbai Mountain (boreal-temperate), Beijing Mountain (temperate), Dinghu Mountain (subtropical), Ailao Mountain (subtropical), Kunming (subtropical), and Xishuangbanna (tropical). Transects were used to sample plant species and growth form composition, leafy (green) biomass, and leaf area in forests representing nearly all the major forest types of China. Leafy biomass was determined using generic algorithms based on tree diameter, canopy structure, and absolute cover. Measurements of VOC emissions were made on 386 of the 541 recorded species using a portable photo-ionization detector method. For 105 species, VOC emissions were also measured using a flow-through leaf cuvette sampling/gas chromatog. anal. method. Results indicate that isoprene and monoterpene emissions, as well as leafy biomass, vary systematically along gradients of ecol. succession in the same manner found in previous studies in the United States, Canada, and Africa. Applying these results to a regional VOC emissions model, we arrive at a value of 21 Tg C for total annual biogenic VOC emissions from China, compared to 5 Tg C of VOCs released annually from anthropogenic sources there. The isoprene and monoterpene emissions are nearly the same as those reported for Europe, which is comparable in size to China.

IT 9003-56-9, 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene
RL: GOC (Geological or astronomical occurrence); PRP (Properties); OCCU (Occurrence)
(emission of biogenic volatile organic compds. (isoprene, monoterpene) from ecosystems (grasslands, shrublands, forests) of China)

RN 9003-56-9 HCAPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene
(9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

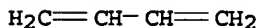
CMF C3 H3 N



CM 2

CRN 106-99-0

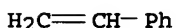
CMF C4 H6



CM 3

CRN 100-42-5

CMF C8 H8



CC 53-10 (Mineralogical and Geological Chemistry)

Section cross-reference(s): 59

IT 78-79-5, 1,3-Butadiene, 2-methyl-, occurrence 9003-56-9,

2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene

RL: GOC (Geological or astronomical occurrence); PRP (Properties);

OCCU (Occurrence)

(emission of biogenic volatile organic compds. (isoprene,
monoterpene) from ecosystems (grasslands, shrublands, forests)
of China)

REFERENCE COUNT: 71 THERE ARE 71 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L122 ANSWER 5 OF 25 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2002:893193 HCAPLUS

DOCUMENT NUMBER: 138:221948

TITLE: Electron spin resonance imaging of polymer
degradation and stabilization

AUTHOR(S): Lucarini, Marco; Pedulli, Gian Franco;
Motyakin, Mikhail V.; Schlick, Shulamith

CORPORATE SOURCE: Department of Organic Chemistry, University of
Bologna, Bologna, 40127, Italy

SOURCE: Progress in Polymer Science (2002), Volume
Date 2003, 28(2), 331-340

CODEN: PRPSB8; ISSN: 0079-6700

PUBLISHER: Elsevier Science Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The application of one-dimensional (1D) and two-dimensional (2D)
ESR imaging (ESRI) is presented for the study of photo- and

thermal degradation of polymers containing hindered amine stabilizers (HAS). The method is based on the formation of stable nitroxide radicals derived from HAS during polymer treatment, and on encoding spatial information in the ESR spectra via magnetic field gradients. The imaging technique allowed nondestructive profiling of the HAS-derived nitroxide radicals. The intensity profile in the sample depth was deduced by 1D ESRI, and the spatial variation of the ESR line shapes ('spectral profiling') was determined by 2D spectral-spatial ESRI. Application of this approach to the photodegradn. of polypropylene and to the photo- and thermal degradation of poly(acrylonitrile-butadiene-styrene) will be described. The method can be used to detect spatial heterogeneities in the degradation process and to identify morphol. domains that are selectively degraded.

IT 106677-58-1, ABS graft copolymer
 RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)
 (photo and thermal degradation and stabilization of
 polymers containing hindered amine stabilizers)
 RN 106677-58-1 HCAPLUS
 CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene,
 graft (9CI) (CA INDEX NAME)

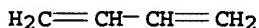
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CRN 107-13-1
 CMF C3 H3 N



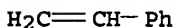
CM 2

CRN 106-99-0
 CMF C4 H6



CM 3

CRN 100-42-5
 CMF C8 H8



CC 35-8 (Chemistry of Synthetic High Polymers)
 Section cross-reference(s): 37
 ST polypropylene ABS photo thermal degradn hindered amine
 stabilizer
 IT Testing of materials
 (nondestructive; photo and thermal degradation and
 stabilization of polymers containing hindered amine
 stabilizers)
 IT Stabilizing agents
 (photo and thermal degradation and stabilization of

polymers containing hindered amine stabilizers)

IT Polymer degradation
(photochem.; photo and thermal degradation and
stabilization of polymers containing hindered amine
stabilizers)

IT Polymer degradation
(thermooxidative; photo and thermal degradation and
stabilization of polymers containing hindered amine
stabilizers)

IT 9003-07-0, Polypropylene 106677-58-1, ABS graft
copolymer
RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)
(photo and thermal degradation and stabilization of
polymers containing hindered amine stabilizers)

IT 25973-55-1, Tinuvin 328 52829-07-9, Tinuvin 770
RL: MOA (Modifier or additive use); USES (Uses)
(stabilizer; photo and thermal degradation and
stabilization of polymers containing hindered amine
stabilizers)

REFERENCE COUNT: 33 THERE ARE 33 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L122 ANSWER 6 OF 25 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2002:808372 HCAPLUS
DOCUMENT NUMBER: 137:306986
TITLE: Optical detection of transmembrane potential
changes
INVENTOR(S): Farinas, Javier A.
PATENT ASSIGNEE(S): Caliper Technologies Corp., USA
SOURCE: U.S., 17 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6468763	B1	20021022	US 2000-661337	2000 0914
PRIORITY APPLN. INFO.:				US 1999-156639P P 1999 0929

AB Comps. for monitoring transmembrane potential across cellular
membranes. The comps. typically comprise a cell having a plasma
membrane that comprises a first leaflet and a second
leaflet, the membrane comprising first and second
membrane associated components which, when placed adjacent
each other either produce or quench a fluorescent signal, wherein.
The first membrane associated component translocates from a
first leaflet of the membrane to a second leaflet of the
membrane in response to an elec. potential gradient
across the membrane, the first membrane associated component
being selected from a non-fluorescent cationic fluorescence
quencher a non-fluorescent anionic fluorescence quencher and a
cationic fluorophore.

IT 9003-56-9, (Acrylonitrile-butadiene-styrene copolymer)
RL: DEV (Device component use); USES (Uses)

(optical detection of transmembrane potential changes)

RN 9003-56-9 HCAPLUS
CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene
(9CI) (CA INDEX NAME)

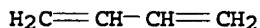
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CRN 107-13-1
CMF C3 H3 N



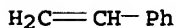
CM 2

CRN 106-99-0
CMF C4 H6



CM 3

CRN 100-42-5
CMF C8 H8



IC ICM C12Q001-02
ICS C12Q001-00; C12N013-00; G01N033-53
INCL 435029000
CC 9-5 (Biochemical Methods)
IT 61-73-4, Methylene blue 548-62-9, Crystal violet 569-64-2D,
Malachite green, derivs. 2564-83-2, Tempo
3229-53-6D, Proxyl, conjugate with triphenylphosphonium derivs.
6268-49-1D, Dabcyl, conjugate with triphenylphosphonium derivs.
6399-81-1D, Triphenylphosphonium bromide, conjugate with BODIPY
13558-31-1D, octadecyl derivs. 23065-05-6D, Styryl, derivs.
25554-61-4D, Doxyl, conjugate with triphenylphosphonium derivs.
65603-19-2, Octadecyl rhodamine B 114199-16-5, CAT 16
138026-71-8D, BODIPY, conjugate with triphenylphosphonium derivs.
174896-83-4D, dabcyl, doxyl and proxyl labeled 255386-93-7
470702-49-9
RL: BUU (Biological use, unclassified); BIOL (Biological study);
USES (Uses)
(optical detection of transmembrane potential changes)
IT 7440-21-3, Silicon, uses 9002-84-0, Polytetrafluoroethylene
9002-86-2, Polyvinyl chloride 9002-88-4, Polyethylene
9003-07-0, Polypropylene 9003-53-6, Polystyrene
9003-56-9, (Acrylonitrile-butadiene-styrene copolymer)
9011-14-7, Polymethylmethacrylate 9016-00-6,
Polydimethylsiloxane 9016-80-2, Polymethylpentene 14808-60-7,
Quartz, uses 24937-79-9, Polyvinylidene fluoride 31900-57-9,
Polydimethylsiloxane
RL: DEV (Device component use); USES (Uses)
(optical detection of transmembrane potential changes)

REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L122 ANSWER 7 OF 25 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2002:287619 HCAPLUS

DOCUMENT NUMBER: 137:79521

TITLE: Preparation and degradation of highly
conducting polyaniline doped with picric acid

AUTHOR(S): Ahmed, Seddique M.

CORPORATE SOURCE: Department of Chemistry, Faculty of Science,
Assiut University, Assiut, 71516, Egypt

SOURCE: European Polymer Journal (2002), 38(6),
1151-1158

CODEN: EUPJAG; ISSN: 0014-3057

PUBLISHER: Elsevier Science Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Preparation and characterization of highly conducting polyaniline (PANI) doped with picric acid (PA) was proved with the help of various techniques. Elemental anal. and FTIR and XPS spectroscopic measurements confirm that the PA operates as a protonating agent to induce the internal conversion of PANI emeraldine base to the emeraldine salt at doping level 50%. Mol. modeling calcns. showed an optimum geometric structure for 2PA:1PANI (energy 38.231388 kcal/mol, and gradient 0.065246). The observed higher conductivity (σ .apprx.150 S/cm) of PA-doped PANI film prepared at molar ratio 2PA:1PANI is attributed to a change in the mol. conformation from coil to expanded coil-like. PA-doped PANI is thermally unstable above .apprx.135°C and the thermal processing with an insulating matrix is not profitable but solution casting is highly promising. PA-doped PANI with acrylonitrile-butadiene-styrene copolymer has been fabricated and showed the threshold value .apprx.4 weight% of a conducting material. The reduced PA-doped PANI reveals an ability to store elec. energy of about 110.43 Wh/kg in a condensed lightwt. form. The immediate decoloration of the dark green (λ_{max} .apprx. 815 nm) PANI after addition of 5.5 µg/mL KMnO₄ in strong acid medium (pH 1.0, H₂SO₄, 40% DMF) is due to the highest oxidized form of PANI. Increasing the absorbance with increases in the KMnO₄ concentration (µg/mL) at .apprx.385 nm has been successfully applied to the determination of trace amount (0.55 µg/mL) of Mn(VII) in a synthetic solution

IT 9003-56-9, ABS polymer

RL: PRP (Properties)

(blends with picric acid-doped polyaniline; preparation and properties of)

RN 9003-56-9 HCAPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene (9CI) (CA INDEX NAME)

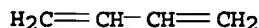
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CRN 107-13-1

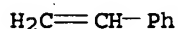
CMF C3 H3 N



CM 2

CRN 106-99-0
CMF C4 H6

CM 3

CRN 100-42-5
CMF C8 H8CC 37-3 (Plastics Manufacture and Processing)
Section cross-reference(s): 52, 72, 79IT Polymer degradation
(thermal; preparation and degradation of highly conducting
polyaniline doped with picric acid)IT 9003-56-9, ABS polymer
RL: PRP (Properties)
(blends with picric acid-doped polyaniline; preparation and
properties of)REFERENCE COUNT: 51 THERE ARE 51 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L122 ANSWER 8 OF 25 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2000:140986 HCAPLUS

DOCUMENT NUMBER: 132:265974

TITLE: Water permeability of polymers at high
concentration gradient and
concentration polarizationAUTHOR(S): Grigor'yants, I. K.; Trikhanova, G. A.
CORPORATE SOURCE: Mosk. Gos. Industrial'nyi Univ., Moscow,
RussiaSOURCE: Plasticheskie Massy (1999), (12), 29-40
CODEN: PLMSAI; ISSN: 0554-2901

PUBLISHER: ZAO NP "Plasticheskie Massy"

DOCUMENT TYPE: Journal; General Review

LANGUAGE: Russian

AB A review with 48 refs. on water permeability of polymeric
membranes discussing the effects of chain structure on
permeability of polyamides, effect of gamma radiation on
permeability of block polyether-polyurethanes and
polycarbonate-polysiloxanes, the effect of radiation sterilization
on permeability of membranes, the effect of the osmotic agent,
water transport conditions, and membrane design on permeability.IT 9003-56-9, ABS plastic
RL: PRP (Properties)
(water permeability of polymers at high concentration gradient
and concentration polarization)

RN 9003-56-9 HCAPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene
(9CI) (CA INDEX NAME)

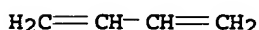
CM 1

CRN 107-13-1
CMF C3 H3 N



CM 2

CRN 106-99-0
CMF C4 H6



CM 3

CRN 100-42-5
CMF C8 H8



- CC 38-0 (Plastics Fabrication and Uses)
- ST water permeability polymer **gradient** polarization review;
membrane polymer permeability gamma radiation review;
sterilization gamma radiation membrane permeability review
- IT Polysiloxanes, properties
RL: PRP (Properties)
(di-Me, polycarbonate-, water permeability of polymers at high
concentration **gradient** and concentration polarization)
- IT Polysiloxanes, properties
Polysiloxanes, properties
RL: PRP (Properties)
(polycarbonate-, block; water permeability of polymers at high
concentration **gradient** and concentration polarization)
- IT Polyurethanes, properties
RL: PRP (Properties)
(polyether-, block; water permeability of polymers at high
concentration **gradient** and concentration polarization)
- IT Polycarbonates, properties
Polycarbonates, properties
RL: PRP (Properties)
(polysiloxane-, block; water permeability of polymers at high
concentration **gradient** and concentration polarization)
- IT Sterilization and Disinfection
(radiation-induced; water permeability of polymers at high
concentration **gradient** and concentration polarization)
- IT Crystallinity
Diffusion
Gamma ray
Membranes, nonbiological
Permeability
Solubility
Sorption
(water permeability of polymers at high concentration **gradient**
and concentration polarization)

IT Polyamides, properties
RL: PRP (Properties)
(water permeability of polymers at high concentration **gradient**
and concentration polarization)
IT 7732-18-5, Water, miscellaneous
RL: MSC (Miscellaneous)
(water permeability of polymers at high concentration **gradient**
and concentration polarization)
IT 9003-01-4, PA 12 9003-56-9, ABS plastic 9011-14-7,
PMMA 24937-16-4, PA 12 24937-78-8, Ethylene-vinyl acetate
copolymer 25038-54-4, PA 6, properties 32131-17-2, PA 66,
properties 50586-48-6, PA 548 76901-49-0, PA 4 85746-30-1,
Laprol
RL: PRP (Properties)
(water permeability of polymers at high concentration **gradient**
and concentration polarization)

L122 ANSWER 9 OF 25 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1999:10082 HCAPLUS

DOCUMENT NUMBER: 130:52908

TITLE: Polycarbonate/acrylonitrile-butadiene-styrene
blends. Miscibility and interfacial adhesion
AUTHOR(S): Santana, O. O.; MasPOCH, M. L.; Martinez, A.
B.

CORPORATE SOURCE: Centre Catala Plastic, Terrassa, E-08222,
Spain

SOURCE: Polymer Bulletin (Berlin) (1998), 41(6),
721-728

CODEN: POBUDR; ISSN: 0170-0839

PUBLISHER: Springer-Verlag

DOCUMENT TYPE: Journal

LANGUAGE: English

AB By DSC measurements it was determined that blends of polycarbonate (PC)
and a ABS core-shell terpolymer with 24% of acrylonitrile and 6%
of butadiene seems to show limited miscibility due to the
partitioning of the oligomers contained on each raw
material. Like in other PC blends systems, the composition of the
conjugated interphase is not constant but depends on the ratio of
components in the blend. In all the compns. studied the
apparent solubility of ABS (actually the SAN phase) in the PC-rich
phase increase with decreasing volume fraction
of PC in blends reaching a maximum at 10% of ABS. Yield Stress of
the blends follows the rule of mixture almost until 10% of ABS,
indicating that interfacial adhesion is strong enough to ensure
stress transfer between phases in the course of yielding and
drawing. Applying the Puckanszky et al. model, it was observed that
>15% of ABS, the effectiveness in stress transfer depends on the
morphol. **gradient** generated during the mixing and
specimens' molding.

IT 9003-56-9, ABS polymer
RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)
(blends; miscibility and interfacial adhesion in
polycarbonate/acrylonitrile-butadiene-styrene copolymer blends)

RN 9003-56-9 HCAPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene
(9CI) (CA INDEX NAME)

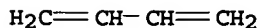
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CRN 107-13-1

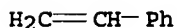
CMF C3 H3 N



CM 2

CRN 106-99-0
CMF C4 H6

CM 3

CRN 100-42-5
CMF C8 H8

CC 36-5 (Physical Properties of Synthetic High Polymers)

IT Glass transition temperature

Miscibility

Polymer morphology

(miscibility and interfacial adhesion in

polycarbonate/acrylonitrile-butadiene-styrene copolymer blends)

IT 9003-56-9, ABS polymer 24936-68-3, Bisphenol A-carbonic
acid copolymer, SRU, properties 25037-45-0, Bisphenol A-carbonic
acid copolymer

RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)

(blends; miscibility and interfacial adhesion in

polycarbonate/acrylonitrile-butadiene-styrene copolymer blends)

REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L122 ANSWER 10 OF 25 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1998:739344 HCAPLUS

DOCUMENT NUMBER: 130:38930

TITLE: Analysis of polymeric materials with
gradient and composite structures

INVENTOR(S): Sumitani, Keiji; Sugitani, Hatsuo

PATENT ASSIGNEE(S): Hitachi Chemical Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 10300649	A2	19981113	JP 1997-110578	1997 0428
PRIORITY APPLN. INFO.:				JP 1997-110578 1997

0428

AB The anal. includes taking the test material along a certain direction, cutting along the direction at a certain angle to prepare a plural number of specimens, and conducting the required tests. The aluminum salts of an ABS **gradient** material were analyzed by atomic absorption spectrometry.

IT 9003-56-9, ABS polymer
RL: ANT (Analyte); PEP (Physical, engineering or chemical process); ANST (Analytical study); PROC (Process)
(anal. of polymeric materials with **gradient** and composite structures)

RN 9003-56-9 HCAPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

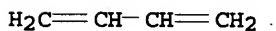
CMF C3 H3 N



CM 2

CRN 106-99-0

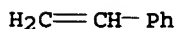
CMF C4 H6



CM 3

CRN 100-42-5

CMF C8 H8



IC ICM G01N001-28
ICS G01N021-01

CC 36-4 (Physical Properties of Synthetic High Polymers)
Section cross-reference(s): 80

ST analysis polymer **gradient** composite structure; aluminum salt ABS **gradient** material analysis; AAS ABS **gradient** material analysis

IT Atomic absorption spectrometry
(anal. of polymeric materials with **gradient** and composite structures)

IT Polymers, processes
RL: ANT (Analyte); PEP (Physical, engineering or chemical process); ANST (Analytical study); PROC (Process)
(anal. of polymeric materials with **gradient** and composite structures)

IT 9003-56-9, ABS polymer
RL: ANT (Analyte); PEP (Physical, engineering or chemical

process); ANST (Analytical study); PROC (Process)
(anal. of polymeric materials with **gradient** and
composite structures)

L122 ANSWER 11 OF 25 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1998:282743 HCAPLUS

DOCUMENT NUMBER: 129:5302

TITLE: IR **temperature** sensors for plastics
processing. Measuring principle, advantages,
and application

AUTHOR(S): Obendrauf, Walter; Langecker, Guenter R.
CORPORATE SOURCE: Inst. Kunststoffverarbeitung, Montanuniv.
Leoben, Leoben, A-8700, Austria

SOURCE: Oesterreichische Kunststoff-Zeitschrift
(1998), 29(3/4), 54-58

CODEN: OKZSAV; ISSN: 0029-926X

PUBLISHER: Verlag Lorenz

DOCUMENT TYPE: Journal

LANGUAGE: German

AB The influence of the penetration depth of IR **temperature**
sensors and the effect of the absorptivity of plastics on
time-resolved **temperature** measurements in plastics
processing was investigated. The penetration depth of the sensor
and the absorptivity of the plastics are relevant for the determination of
temperature gradients in the melt. A layer model was
used to allow quant. results on the **temperature** display of the
sensor. Depending on the plastics, the penetration depth varies
between 8 mm (PVC) and some μ m (PP) and has a significant
influence on the **temperature** measurement. If the sensors are
integrated in hot tool or nozzle surfaces, the IR radiation of the
sensor itself must also be taken into account.

IT 9003-56-9, ABS

RL: PRP (Properties)

(Novodur P 2T; IR absorptivity and penetration depth in study
of IR **temperature** sensors)

RN 9003-56-9 HCAPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene
(9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

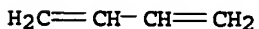
CMF C3 H3 N



CM 2

CRN 106-99-0

CMF C4 H6



CM 3

CRN 100-42-5

CMF C8 H8

 $H_2C=CH-Ph$

- CC 38-2 (Plastics Fabrication and Uses)
ST IR temp sensor plastics absorptivity; penetration depth
IR temp sensor plastics
IT Plastics, properties
RL: PRP (Properties)
(IR absorptivity and penetration depth in study of IR temperature sensors)
IT Temperature sensors
(IR temperature sensors for plastics processing)
IT Absorptivity
(IR; IR absorptivity and penetration depth of plastics in study of IR temperature sensors)
IT 9002-88-4, Polyethylene
RL: PRP (Properties)
(Daplen CE 4664; IR absorptivity and penetration depth in study of IR temperature sensors)
IT 24937-16-4, PA 12
RL: PRP (Properties)
(Grilamid L 20GM; IR absorptivity and penetration depth in study of IR temperature sensors)
IT 9002-86-2, PVC 9003-07-0, Polypropylene 9003-54-7, Luran 368R 25085-53-4, KS 10 79331-75-2, Grilamid TR 55
RL: PRP (Properties)
(IR absorptivity and penetration depth in study of IR temperature sensors)
IT 9003-56-9, ABS
RL: PRP (Properties)
(Novodur P 2T; IR absorptivity and penetration depth in study of IR temperature sensors)
IT 9011-14-7, PMMA
RL: PRP (Properties)
(PMMA 8N; IR absorptivity and penetration depth in study of IR temperature sensors)
IT 9003-53-6, Polystyrene
RL: PRP (Properties)
(PS 168N; IR absorptivity and penetration depth in study of IR temperature sensors)

L122 ANSWER 12 OF 25 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1997:103618 HCAPLUS

DOCUMENT NUMBER: 126:161489

TITLE: Characterization of immobilized cells in biodegradation of ABS resin manufacturing wastewater

AUTHOR(S): Chen, Wen-Chin; Cheng, Sheng-Shung

CORPORATE SOURCE: Department of Environmental Engineering, Chenk Kung University, Tainan, Taiwan

SOURCE: Water Science and Technology (1996), 34(10, Water Quality International '96, Part 6), 51-58

CODEN: WSTED4; ISSN: 0273-1223

PUBLISHER: Elsevier

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Because of the presence of refractory and biol. inhibitory organic compds. in ABS resin wastewater, which would retard the

bioactivity of the autotrophic nitrifier and make the efficiency of nitrification process unstable, the application of cell immobilization for ABS wastewater treatment has been investigated by immobilizing the enrichment culture of nitrifying bacteria with alginate. The characterization of the immobilized cells in various alginate concns. was conducted by a series of biodegradability studies with electrolytic respirometry and compared with the differences from the dispersed cells. Results clearly indicated that immobilized cells achieved higher efficiency of COD and TKN removal than the dispersed cells during the period of high initial concentration of wastewater. Meanwhile, high concentration of cells were growing near the gel surface and reduced the effects of diffusional restriction. No remarkable difference was found while the concentration of alginate ranged from 3% to 5%. According to mass balance of total nitrogen, more than 25% of total nitrogen was removed in the batch system of the immobilized cell. Simultaneous nitrification and denitrification could occur due to the oxygen gradient throughout the gel matrix. Compared with the complete mixing system of the dispersed cell, the approach for the immobilized-cell system provided a more effective method for treating the special wastewater with high strength of nitrogenous and inhibitory compds.

IT 9003-56-9, ABS

RL: MSC (Miscellaneous)

(characterization of immobilized cells in biodegrdn. of ABS resin manufacturing wastewater)

RN 9003-56-9 HCAPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

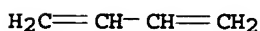
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CM 2

CRN 106-99-0

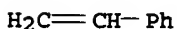
CMF C4 H6



CM 3

CRN 100-42-5

CMF C8 H8



CC 60-1 (Waste Treatment and Disposal)

Section cross-reference(s): 37

IT 9003-56-9, ABS

RL: MSC (Miscellaneous)
(characterization of immobilized cells in biodegrdn. of ABS
resin manufacturing wastewater)

L122 ANSWER 13 OF 25 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1997:27124 HCAPLUS

DOCUMENT NUMBER: 126:75840

TITLE: Manufacturing a molding using a filler or an
additive concentrated on an arbitrary portion
or distributed at a **gradient**
concentration

INVENTOR(S): Kato, Tsuguo; Thai, Cao M.

PATENT ASSIGNEE(S): Kabushiki Kaisha Toshiba, Japan

SOURCE: U.S., 9 pp., Cont. of U. S. Ser. No. 198,262,
abandoned.

CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5589129	A	19961231	US 1995-491687	1995 0619
			JP 1993-30161	A 1993 0219
			US 1994-198262	B1 1994 0218

AB A d.c. voltage is applied to a liquid resin composition to concentrate the
title filler/additive ionic material and/or chargeable material on
a desired portion or to distribute the ionic material and/or
chargeable material **continuously**, prior to curing or
solidifying the resin. SiO₂-filled Epon 828-
methylnetetrahydrophthalic anhydride copolymer composition was subjected
to d.c. current 100V for 5 min, and cured at 120.
degree. for 2 h and 150° for 10 h to give
a molding having Barcol surface hardness 71 and crack resistance (
thermal cycle test 0-100°; 1 h cycle) 8
cycles, vs. 71 and 1, resp., for epoxy composition without current
applied.

IT 9003-56-9, ABS resin

RL: PEP (Physical, engineering or chemical process); POF (Polymer
in formulation); PROC (Process); USES (Uses)

(manufacturing a molding using a filler or an additive concentrated on an
arbitrary portion or distributed at a **gradient**
concentration)

RN 9003-56-9 HCAPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene
(9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

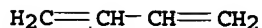
CMF C3 H3 N



CM 2

CRN 106-99-0

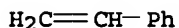
CMF C4 H6



CM 3

CRN 100-42-5

CMF C8 H8



IC ICM B29C035-08

INCL 264437000

CC 38-2 (Plastics Fabrication and Uses)

Section cross-reference(s): 76

ST voltage application epoxy molding manuf; filler migration voltage application filled epoxy; additive migration voltage application filled polymer; continuous distribution filler voltage application polymer

IT Electric current

(application of d.c. current; manufacturing a molding using a filler or an additive concentrated on an arbitrary portion or distributed at a gradient concentration)

IT Polyimides, uses

RL: PEP (Physical, engineering or chemical process); POF (Polymer in formulation); PROC (Process); USES (Uses)
(maleimide-based; manufacturing a molding using a filler or an additive concentrated on an arbitrary portion or distributed at a gradient concentration)

IT Electronic packaging process

(manufacturing a molding using a filler or an additive concentrated on an arbitrary portion or distributed at a gradient concentration)

IT Clays, uses

Glass, uses

RL: MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)

(manufacturing a molding using a filler or an additive concentrated on an arbitrary portion or distributed at a gradient concentration)

IT Acrylic polymers, uses

RL: PEP (Physical, engineering or chemical process); POF (Polymer in formulation); PROC (Process); USES (Uses)

(manufacturing a molding using a filler or an additive concentrated on an arbitrary portion or distributed at a gradient concentration)

IT Epoxy resins, uses

RL: PEP (Physical, engineering or chemical process); POF (Polymer in formulation); PROC (Process); USES (Uses)

(manufacturing a molding using a filler or an additive concentrated on an arbitrary portion or distributed at a **gradient** concentration)

IT Phenolic resins, uses

RL: PEP (Physical, engineering or chemical process); POF (Polymer in formulation); PROC (Process); USES (Uses)

(manufacturing a molding using a filler or an additive concentrated on an arbitrary portion or distributed at a **gradient** concentration)

IT Polyamides, uses

RL: PEP (Physical, engineering or chemical process); POF (Polymer in formulation); PROC (Process); USES (Uses)

(manufacturing a molding using a filler or an additive concentrated on an arbitrary portion or distributed at a **gradient** concentration)

IT Polyesters, uses

RL: PEP (Physical, engineering or chemical process); POF (Polymer in formulation); PROC (Process); USES (Uses)

(manufacturing a molding using a filler or an additive concentrated on an arbitrary portion or distributed at a **gradient** concentration)

IT Polythiophenylenes

RL: PEP (Physical, engineering or chemical process); POF (Polymer in formulation); PROC (Process); USES (Uses)

(manufacturing a molding using a filler or an additive concentrated on an arbitrary portion or distributed at a **gradient** concentration)

IT Semiconductor materials

(manufacturing a molding using a filler or an additive concentrated on an arbitrary portion or distributed at a **gradient** concentration for encapsulating)

IT 76397-91-6, Bisphenol A-epichlorohydrin-methyltetrahydrophthalic anhydride copolymer

RL: PEP (Physical, engineering or chemical process); POF (Polymer in formulation); PRP (Properties); PROC (Process); USES (Uses)

(filled; manufacturing a molding using a filler or an additive concentrated on an arbitrary portion or distributed at a **gradient** concentration)

IT 1344-28-1, Aluminum oxide (Al₂O₃), uses 7631-86-9, Silica, uses

12033-89-5, Silicon nitride, uses 13463-67-7, Titanium oxide,

uses 14807-96-6, Talc, uses 21645-51-2, Aluminum hydroxide,

uses 24304-00-5, Aluminum nitride 123513-16-6, Denon 314C

RL: MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)

(manufacturing a molding using a filler or an additive concentrated on an arbitrary portion or distributed at a **gradient** concentration)

IT 9002-88-4, Polyethylene 9003-07-0, Polypropylene 9003-53-6,

Polystyrene 9003-56-9, ABS resin

RL: PEP (Physical, engineering or chemical process); POF (Polymer in formulation); PROC (Process); USES (Uses)

(manufacturing a molding using a filler or an additive concentrated on an arbitrary portion or distributed at a **gradient** concentration)

IT 126123-47-5

RL: PEP (Physical, engineering or chemical process); POF (Polymer in formulation); PRP (Properties); PROC (Process); USES (Uses)

(manufacturing a molding using a filler or an additive concentrated on an arbitrary portion or distributed at a **gradient** concentration)

ACCESSION NUMBER: 1995:690410 HCAPLUS
DOCUMENT NUMBER: 123:142007
TITLE: Determination and survey of starting materials
and subsidiary colors in new coccine by high
performance liquid chromatography
AUTHOR(S): Yamada, Makiko; Kato, Yoshiaki; Nakamura,
Mikio; Ishimitsu, Susumu; Shibata, Tadashi;
Ito, Yoshio
CORPORATE SOURCE: San-Ei Gen F. F. I., Inc., Toyonaka, 561,
Japan
SOURCE: Shokuhin Eiseigaku Zasshi (1995), 36(3),
417-22
CODEN: SKEZAP; ISSN: 0015-6426

DOCUMENT TYPE: Journal

LANGUAGE: Japanese

AB A method for determination of the starting materials, [7-hydroxy-1,3,6-naphthalenesulfonic acid (TS); G-salt (GS), R-salt (RS), Schaeffer's salt (SS) and naphthionic acid (NA)] and subsidiary colors, [ponceau 6R (P6R), amaranth (R-2) and fast red E (FRE)] in new coccine (R-102) was developed by use of HPLC. The following conditions were used for anal.: column, L-column ODS (4.6 mm i.d. + 250 mm); eluent, gradient elution system of 0.02 M ammonium acetate and acetonitrile (hold at 0.02 M ammonium acetate for 5 min, then 0-30% acetonitrile in 45 min); detection for TS, GS, RS, SS, and NA at 238 nm and subsidiary colors at 510 nm. Recoveries of each impurity from R-102 averaged 99.1-103.5%. Ten samples of com. R-102 were analyzed by the present HPLC method and the impurities were as follows: 0.005-0.044%; GS, 0.044-0.284%; NA, 0.013-0.196%; RS, N.D.; SS, N.D.; P6R, 0.008-0.169%; R-2, N.D. approx. 0.279%; FRE, 0.007-0.100%. The detection limit was 0.001% for each impurity.

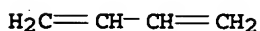
IT 9003-56-9, R-102
RL: AMX (Analytical matrix); ANST (Analytical study)
(determination and survey of starting materials and subsidiary colors in R-102 by HPLC)

RN 9003-56-9 HCAPLUS
CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1
CMF C3 H3 N

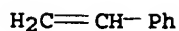
CM 2

CRN 106-99-0
CMF C4 H6

CM 3

CRN 100-42-5

CMF C8 H8



CC 17-1 (Food and Feed Chemistry)

IT 9003-56-9, R-102

RL: AMX (Analytical matrix); ANST (Analytical study)
(determination and survey of starting materials and subsidiary colors
in R-102 by HPLC)

L122 ANSWER 15 OF 25 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1995:611511 HCAPLUS

DOCUMENT NUMBER: 123:200268

TITLE: Fracture criterion of materials subjected to
temperature gradient

AUTHOR(S): Shah, Q. H.; Homma, H.

CORPORATE SOURCE: Department Energy Engineering, Toyohashi
University Technology, Toyohashi, JapanSOURCE: International Journal of Pressure Vessels and
Piping (1995), 62(1), 59-68
CODEN: PRVPAS; ISSN: 0308-0161

PUBLISHER: Elsevier

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Fracture tests on fatigue-pre-cracked three-point bend specimens
of PMMA, polycarbonate (PC), and ABS were conducted to establish
the effects of a temperature gradient on the
crack-initiation fracture toughness in temperature ranges
where the fracture toughness of the above-mentioned materials
changes steeply. The tests were made on specimens subjected to
various temperature gradients while the crack-tip
temperature of the specimen was kept constant. Results obtained
from the three materials were compared to establish a fracture
criterion of the materials subjected to a temperature
gradient. The results showed that the fracture toughness
of all three materials is influenced in a similar fashion and is
dependent upon the degree of the temperature
gradient along the crack line.

IT 9003-56-9, ABS

RL: PRP (Properties)

(fracture criterion of polymers subjected to temperature
gradient)

RN 9003-56-9 HCAPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene
(9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

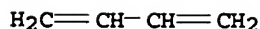
CMF C3 H3 N



CM 2

CRN 106-99-0

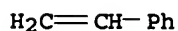
CMF C4 H6



CM 3

CRN 100-42-5

CMF C8 H8



CC 37-5 (Plastics Manufacture and Processing)
ST polymer fracture three point bend; temp gradient
crack plastic; PMMA fracture three point bend; ABS fracture three
point bend; polycarbonate fracture three point bend
IT Crack
Fracture
Polymer morphology
Strain
Stress, mechanical
Testing of materials
(fracture criterion of polymers subjected to temperature
gradient)
IT Plastics
Polycarbonates, properties
Polymers, properties
RL: PRP (Properties)
(fracture criterion of polymers subjected to temperature
gradient)
IT 9003-56-9, ABS 9011-14-7, PMMA 24936-68-3, Bisphenol
A-carbonic acid copolymer, sru, properties 25037-45-0, Bisphenol
A-carbonic acid copolymer
RL: PRP (Properties)
(fracture criterion of polymers subjected to temperature
gradient)

L122 ANSWER 16 OF 25 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1994:701919 HCAPLUS

DOCUMENT NUMBER: 121:301919

TITLE: On the pressure dependency of the viscosity of
molten polymers

AUTHOR(S): Kadijk, S. E.; Van den Brule, B. H. A. A.

CORPORATE SOURCE: Philips Research Laboratories, Eindhoven,
5600JA, Neth.SOURCE: Polymer Engineering and Science (1994),
34(20), 1535-46

CODEN: PYESAZ; ISSN: 0032-3888

PUBLISHER: Society of Plastics Engineers

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A slit viscometer to measure the viscosity of polymer melts under
processing conditions is described. Along the slit a pressure
drop is generated by applying a pressure at both the entrance and
the exit. In this way the pressure in the center can be
controlled independently of the shear rate. The pressure
gradient in the slit is measured by means of three
pressure transducers which are mounted in the region of fully
developed flow. The results of pressure-dependent viscosity

measurements on polystyrene, ABS resin, and polypropylene are presented in a shear rate range of five decades. The flow curves obtained at different pressures and temps. can be shifted onto a master curve. The shear thinning behavior of the three materials is adequately described with the generalized Cross-Carreau equation, while the zero shear viscosity is modeled with a generalized Arrhenius-WLF (Williams-Ferry-Landel) relationship, incorporating a pressure dependency. Alternatively, it is possible to describe the zero shear viscosity in terms of the free volume fraction and the temperature

IT 9003-56-9, ABS resin
 RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
 (Ronfalin SFA; pressure dependency of viscosity of molten polymers determined by slit viscometer)
 RN 9003-56-9 HCAPLUS
 CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene (9CI) (CA INDEX NAME)

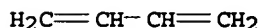
CM 1

CRN 107-13-1
 CMF C3 H3 N



CM 2

CRN 106-99-0
 CMF C4 H6



CM 3

CRN 100-42-5
 CMF C8 H8



CC 36-9 (Physical Properties of Synthetic High Polymers)
 Section cross-reference(s): 37
 IT 9003-56-9, ABS resin
 RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
 (Ronfalin SFA; pressure dependency of viscosity of molten polymers determined by slit viscometer)

L122 ANSWER 17 OF 25 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1994:491658 HCAPLUS
 DOCUMENT NUMBER: 121:91658
 TITLE: Interpenetrating polymer network (IPN) as a permanent joint between the elements of a new type of artificial cornea

AUTHOR(S): Chirila, Traian; Vijayasekaran, Sarojini;
Horne, Robert; Chen, Yi Chi; Dalton, Paul D.;
Constable, Ian J.; Crawford, Geoffrey J.
CORPORATE SOURCE: Lions eye Inst., Nedlands, 6009, Australia
SOURCE: Journal of Biomedical Materials Research
(1994), 28(6), 745-53
CODEN: JBMRBG; ISSN: 0021-9304
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The combination at the interface between 2 chemical identical polymers was investigated by light and electron (scanning, transmission) microscopy. The polymers constitute elements of a new type of artificial cornea in which the peripheral skirt was made from spongy poly(2-hydroxyethyl methacrylate) (PHEMA) and the central optical zone from homogeneous, transparent PHEMA. Their 2-phase combination along the boundary fulfill formally the requirements for an IPN. The procedure for the manufacture of prosthesis was described in detail. Thin and ultrathin sections excised from the interface region were investigated using microscopic techniques. Light microscopy allowed the measurement of the diffusion path length of transparent PHEMA into sponge, which was approx. 0.5 mm. Transmission electron microscopy revealed a cellular-like morphol. as well as larger segregated zones, which indicated network interpenetration on a mol. level and also a relatively poor miscibility of the 2 polymers despite their identical chemical structure. The latter was interpreted as a result of the submicroscopic restraints imposed by polymer I (sponge) upon polymer II. This study provides evidence that the interface combination of the prosthetic elements should be regarded as a gradient homo-IPN. This system offers a union between elements much stronger than those previously reported in artificial corneas.

IT 156727-36-5

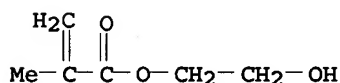
RL: BIOL (Biological study)
(interpenetrating networks of, for artificial cornea)

RN 156727-36-5 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 1,2-ethanediyl ester, polymer with 2-hydroxyethyl 2-methyl-2-propenoate and 1,3-pentadiene (9CI) (CA INDEX NAME)

CM 1

CRN 868-77-9
CMF C6 H10 O3

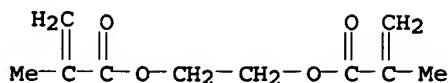


CM 2

CRN 504-60-9
CMF C5 H8



CM 3

CRN 97-90-5
CMF C10 H14 O4

CC 63-7 (Pharmaceuticals)
 IT 25249-16-5, Poly(2-hydroxyethyl methacrylate) 156727-36-5
 RL: BIOL (Biological study)
 (interpenetrating networks of, for artificial cornea)

L122 ANSWER 18 OF 25 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1987:120633 HCAPLUS

DOCUMENT NUMBER: 106:120633

TITLE: Cast films with crystalline
 tetracyanoquinodimethane radical ion salts: a
 new way to increase the electrical
 conductivity

AUTHOR(S): Hocker, Juergen; Jonas, Friedrich; Mueller,
 Hans Klaus

CORPORATE SOURCE: Zent. Forsch. Entwickl., Bayer A.-G.,
 Leverkusen, D-5090, Fed. Rep. Ger.

SOURCE: Angewandte Makromolekulare Chemie (1986),
 145-146, 191-210
 CODEN: ANMCBO; ISSN: 0003-3146

DOCUMENT TYPE: Journal

LANGUAGE: German

AB Antistatic, transparent films were prepared from polycarbonates or
 cellulose acetate [9004-35-7] containing TCNQ radical ion
 salts to increase the elec. conductivity The radical salts
 increased the elec. conductivity of the polymers into the
 antistatic region, and the resulting elec. properties were
 practically independent of atmospheric humidity. The formation of
 appropriate crystal structure, e.g., dendrites, fibers, or
 whiskers, of the TCNQ salts was crucial for increasing
 the elec. conductivity The crystalline precipitation must form a 3-dimensional
 network throughout the polymer matrix; such network formation was
 attained only by crystallization from solution With ideal crystal
 distribution, the addition of 0.5% salt gave elec. conductivity $\leq 10^{-3}$
 S/cm. The films behaved as elec. semiconductors and had a pos.
 temperature gradient. The modified polycarbonate
 films could be used as transparent packaging films.

IT 9003-56-9

RL: USES (Uses)

(films, containing radical ion salts, elec. conductivity of)

RN 9003-56-9 HCAPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene
 (9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

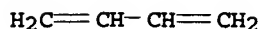
CMF C3 H3 N



CM 2

CRN 106-99-0

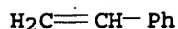
CMF C4 H6



CM 3

CRN 100-42-5

CMF C8 H8



CC 37-5 (Plastics Manufacture and Processing)

Section cross-reference(s): 38

IT Polycarbonates, uses and miscellaneous

RL: USES (Uses)

(antistatic films, containing TCNQ radical ion salts, elec. conductivity of and radical ion salt crystallization in)

IT Electric conductivity and conduction

(of antistatic polymer films containing TCNQ radical salts)

IT 9004-35-7, Cellulose acetate 24936-68-3, BisphenolA-carbonic acid copolymer, SRU, uses and miscellaneous 25037-45-0, BisphenolA-carbonic acid copolymer

RL: USES (Uses)

(films, antistatic, containing TCNQ radical salts, elec. conductivity and radical salt crystal structure in relation to)

IT 100-42-5, uses and miscellaneous 9003-56-9

RL: USES (Uses)

(films, containing radical ion salts, elec. conductivity of)

IT 51686-20-5

RL: USES (Uses)

(polycarbonates and cellulose acetate films containing, elec. conductivity in relation to)

IT 12366-26-6

RL: USES (Uses)

(polycarbonates and styrene polymers containing, elec. conductivity of)

L122 ANSWER 19 OF 25 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1983:108075 HCAPLUS

DOCUMENT NUMBER: 98:108075

TITLE: Determination of composition distribution of acrylonitrile-styrene copolymers by thin-layer chromatography

AUTHOR(S): Ogawa, Toshio; Ishitobi, Wataru

CORPORATE SOURCE: Hirakata Plast. Lab., Ube Ind., Ltd., Hirakata, 573, Japan

SOURCE: Journal of Polymer Science, Polymer Chemistry Edition (1983), 21(3), 781-8
CODEN: JPLCAT; ISSN: 0449-296X

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Determination of chemical composition distribution of acrylonitrile(I)-styrene copolymers (II) [9003-54-7] was performed by thin-layer chromatog. (TLC). A mixture of C₆H₆ and MeCOEt gave the most suitable calibration curve of R_f values vs. I concns., where a concentration-gradient technique was applied for development. Average I concns. obtained by TLC were coincident with those found by elemental anal. II extracted from ABS resin [9003-56-9] were sufficiently arranged in order of breadth of composition distribution by using the data from TLC. Agreement between the composition distribution curve and that from the theory of copolymn. was good.

IT 9003-56-9

RL: PRP (Properties)

(acrylonitrile-styrene copolymers extracted from, sequence distribution of, thin-layer chromatog. determination of)

RN 9003-56-9 HCAPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

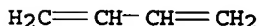
CMF C3 H3 N



CM 2

CRN 106-99-0

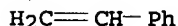
CMF C4 H6



CM 3

CRN 100-42-5

CMF C8 H8



CC 36-2 (Physical Properties of Synthetic High Polymers)

Section cross-reference(s): 80

IT 9003-56-9

RL: PRP (Properties)

(acrylonitrile-styrene copolymers extracted from, sequence distribution of, thin-layer chromatog. determination of)

L122 ANSWER 20 OF 25 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1982:123800 HCAPLUS

DOCUMENT NUMBER: 96:123800

TITLE: Charpy impact resistance of weathered thermoplastic sheets

AUTHOR(S): Nishimura, Okio; Kubota, Hiroshi; Suzuki, Satoru

CORPORATE SOURCE: Hokkaido Ind. Dev. Lab., Sapporo, Japan
SOURCE: Hokkaido Kogyo Kaihatsu Shikensho Hokoku
(1981), 24, 145-52
CODEN: HKKHAG; ISSN: 0441-0734

DOCUMENT TYPE: Journal
LANGUAGE: Japanese

AB Flatwise and edgewise Charpy impact tests were carried out on sheets of polystyrene (I) [9003-53-6], PVC [9002-86-2], poly(Me methacrylate) [9011-14-7], ABS [9003-56-9], polyoxymethylene, and polyethylene (II) [9002-88-4] which were exposed at Sapporo for 3 yr. The yearly changes in Charpy impact strength (aKC) were evaluated and correlations with mech. properties were investigated. In the case of I, ABS, polyoxymethylene and II, aKC decreased sharply on outdoor exposure. The decrease was largest on the 1st exposure period and became gradual on subsequent exposure. After 1-yr exposure all plastics (except PVC) broke on edgewise striking, and I, ABS, polyoxymethylene, and II broke in the flatwise striking unnotched state. Lower values were obtained in the flatwise test than in the edgewise test. For I, ABS, polyoxymethylene and II correlations were obtained between aKC and tensile strength (σ_t), elongation at rupture (dt), rupture energy (Wf), flexural strength, and maximum deflection. In the tensile test the gradient of the line which shows the correlation between σ_t and aKC changed widely depending on whether the breaking occurred before or after the yield point. The dt and Wf of PVC decreased on exposure, but changes in aKC were not observed as the breaking occurred in the ductile area.

IT 9003-56-9
RL: USES (Uses)
(outdoor weathering of, Charpy impact resistance in relation to)
RN 9003-56-9 HCAPLUS
CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene (9CI) (CA INDEX NAME)

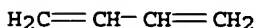
CM 1

CRN 107-13-1
CMF C3 H3 N



CM 2

CRN 106-99-0
CMF C4 H6



CM 3

CRN 100-42-5
CMF C8 H8

H₂C=CH-Ph

CC 37-5 (Plastics Manufacture and Processing)
 IT 9002-86-2 9002-88-4 9003-53-6 9003-56-9 9011-14-7
 RL: USES (Uses)
 (outdoor weathering of, Charpy impact resistance in relation to)

L122 ANSWER 21 OF 25 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1981:588018 HCAPLUS
 DOCUMENT NUMBER: 95:188018
 TITLE: Charpy impact resistance of weathered thermoplastics
 AUTHOR(S): Nishimura, Okio; Kubota, Hiroshi; Suzuki, Satoru
 CORPORATE SOURCE: Gov. Ind. Dev. Lab., Hokkaido, Japan
 SOURCE: Proceedings of the Japan Congress on Materials Research (1981), 24th, 288-94
 CODEN: JMRPA9; ISSN: 0368-3141
 DOCUMENT TYPE: Journal
 LANGUAGE: English

AB The Charpy impact strength (aKC) of polystyrene (I) [9003-53-6], ABS [9003-56-9], polyoxymethylene (II), and polyethylene (III) [9002-88-4] sharply decreased on outdoor exposure over 3 y. The sharpest decline occurred during the 1st exposure level. After 1 y, all samples except PVC [9002-86-2] broke on edgewise striking, and all except PVC and poly(Me methacrylate) [9011-14-7] broke on flatwise striking. Lower values were obtained in the latter test. For I, ABS, II, and III, the Charpy impact values correlated well with tensile strength, elongation at rupture (dt), tensile rupture energy (Wt), and maximum deflection. In the case of the tensile test, the line gradient varied widely depending on whether the break occurred before or after the yield point. The dt and Wt of PVC decreased by exposure, but changes in aKC were not recognized because the breaking occurred in the ductile area. In many cases where a plastic breaks ductility-wise in a static tensile test in spite of weathering degradation, the aKC does not show such changes as to indicate correctly the practical impact performance.

IT 9003-56-9
 RL: PRP (Properties)
 (impact strength of, weathering effect on)
 RN 9003-56-9 HCAPLUS
 CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

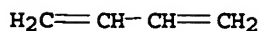
CRN 107-13-1
 CMF C3 H3 N

H₂C=CH-C≡N

CM 2

CRN 106-99-0

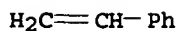
CMF C4 H6



CM 3

CRN 100-42-5

CMF C8 H8



CC 36-5 (Plastics Manufacture and Processing)

IT 9002-86-2 9002-88-4 9003-53-6 9003-56-9 9011-14-7

RL: PRP (Properties)

(impact strength of, weathering effect on)

L122 ANSWER 22 OF 25 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1979:461237 HCAPLUS

DOCUMENT NUMBER: 91:61237

TITLE: Study of the intermediate layer of metallized plastics. (3. Hardness of the etched surface of ABS-2020 plastics)

AUTHOR(S): Paulavicius, R.; Salkauskas, M.; Zitkeviciute, I.; Bikulcius, G.

CORPORATE SOURCE: Inst. Khim. Khim. Tekhnol., Vilnius, USSR

SOURCE: Lietuvos TSR Mokslu Akademijos Darbai, Serija

B: Chemija, Technika, Fizine Geografija

(1979), (3), 85-91

CODEN: LMDBAL; ISSN: 0024-2993

DOCUMENT TYPE: Journal

LANGUAGE: Russian

AB The surface hardness gradient of etched plastic ABS-2020 [9003-56-9] was determined and its effect on the adherence with Cu coating was evaluated. Etching of ABS-2020 in a H₂SO₄ solution of CrO₃ changed the surface hardness to a depth of 1.5 μ. Maximum values of surface hardness and roughness created conditions for better adherence between the Cu coating and the plastic.

IT 9003-56-9

RL: USES (Uses)

(hardness of etched, copper coating adherence in relation to)

RN 9003-56-9 HCAPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

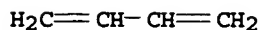
CRN 107-13-1

CMF C3 H3 N



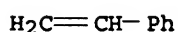
CM 2

CRN 106-99-0
CMF C4 H6



CM 3

CRN 100-42-5
CMF C8 H8



- CC 56-5 (Nonferrous Metals and Alloys)
Section cross-reference(s): 37
- IT Coating materials
(copper, adherence of, to ABS, etched surface hardness in relation to)
- IT Etching
(of ABS, surface hardness and copper coating adherence in relation to)
- IT 7440-50-8, uses and miscellaneous
RL: USES (Uses)
(adherence of coatings of, ABS etched surface hardness in relation to)
- IT 7664-93-9, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(etching with chromic acid-containing, of ABS, surface hardness and adherence of copper coating in relation to)
- IT 1333-82-0
RL: USES (Uses)
(etching with sulfuric acid containing, of ABS, surface hardness and copper coating adherence in relation to)
- IT 9003-56-9
RL: USES (Uses)
(hardness of etched, copper coating adherence in relation to)

L122 ANSWER 23 OF 25 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1975:99441 HCAPLUS
DOCUMENT NUMBER: 82:99441
TITLE: Motionless mixers in plastic processing
AUTHOR(S): Schott, N. R.; Weinstein, B.; LaBombard, D.
CORPORATE SOURCE: Dep. Plast. Technol., Lowell Technol. Inst.,
Lowell, MA, USA
SOURCE: Chemical Engineering Progress (1975), 71(1),
54-8
CODEN: CEPRA8; ISSN: 0360-7275
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Pressure drop and heat transfer data were determined for polyethylene (I) [9002-88-4], polypropylene [9003-07-0], polystyrene [9003-53-6], and ABS [9003-56-9] during flow through a pipe containing a stationary baffle (motionless mixer) or an open pipe. For I, the melt properties were used to calculate the pressure drop in the empty pipe by a friction factor

relation, and the calculated pressure was used to divide the total pressure drop into contributions due to the empty pipe and the mixer elements. The pressure drops were affected by heating of the I during flow. The mixing elements reduced the temperature gradients in the molten polymer.

IT 9003-56-9

RL: USES (Uses)

(motionless mixer for molten, heating and pressure drop in)

RN 9003-56-9 HCAPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

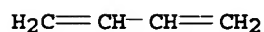
CMF C3 H3 N



CM 2

CRN 106-99-0

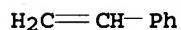
CMF C4 H6



CM 3

CRN 100-42-5

CMF C8 H8



CC 37-2 (Plastics Fabrication and Uses)

Section cross-reference(s): 48

ST mixer motionless polymer melt; heat transfer polymer mixing; polyethylene melt motionless mixer

IT Heat transfer

(in polymer melts, in motionless mixers)

IT Polymers, uses and miscellaneous

RL: USES (Uses)

(motionless mixer for molten, heating and pressure drop in)

IT Mixing apparatus

(motionless, for molten polymers, heating and pressure drop in)

IT 9002-88-4 9003-07-0 9003-53-6 9003-56-9

RL: USES (Uses)

(motionless mixer for molten, heating and pressure drop in)

L122 ANSWER 24 OF 25 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1974:553891 HCAPLUS

DOCUMENT NUMBER: 81:153891
 TITLE: Viscous dissipation in die flows
 AUTHOR(S): Cox, Howard W.; Macosko, Christopher W.
 CORPORATE SOURCE: Dep. Chem. Eng. Mater. Sci., Univ. Minn.,
 Minneapolis, MN, USA
 SOURCE: AIChE Journal (1974), 20(4), 785-95
 CODEN: AICEAC; ISSN: 0001-1541
 DOCUMENT TYPE: Journal
 LANGUAGE: English

AB Large temperature rises, <70.deg., were observed for the flow of ABS polymer [9003-56-9] and branched polyethylene [9002-88-4] melts in 3 die geometries. Calcns. indicated that severe radical temperature gradients existed in these flow geometries under conditions similar to those in polymer processing and in viscometry detns. A numerical solution of the flow equations modeled the flow situation in all 3 geometries. A simple Nusselt number correlation gave good agreement between predicted and determined melt surface temperature rises. The pressure drop indicated that a nonisothermal flow occurred, and did not distinguish the type of heat transfer boundary condition present.

IT 9003-56-9
 RL: USES (Uses)
 (flow of molten, surface temperature rise in relation to)
 RN 9003-56-9 HCAPLUS
 CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene
 (9CI) (CA INDEX NAME)

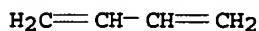
CM 1

CRN 107-13-1
 CMF C3 H3 N



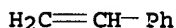
CM 2

CRN 106-99-0
 CMF C4 H6



CM 3

CRN 100-42-5
 CMF C8 H8



CC 37-2 (Plastics Fabrication and Uses)
 IT Flow
 (of polymer melts, surface temperature rise of, determination of)
 IT 9002-88-4 9003-56-9
 RL: USES (Uses)

(flow of molten, surface temperature rise in relation to)

L122 ANSWER 25 OF 25 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1969:38556 HCAPLUS

DOCUMENT NUMBER: 70:38556

TITLE: Comparison of various platable plastics
substrates for appliance backsplash parts
AUTHOR(S): Eshenaur, R. E.; Isaacs, Jack L.; Robb, W. C.
CORPORATE SOURCE: Gen. Elec. Co., Louisville, KY, USA
SOURCE: Technical Papers of the Regional Technical
Conference, Society of Plastics Engineers,
Connecticut Section (1968) 1-15
CODEN: TPCSA6

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Two acrylonitrile-butadiene-styrene copolymers(I), 4
polypropylenes (II), and 1 high-impact polystyrene (III) were
plated by com. available plating processes and evaluated for
appearance, thermal cycle test, static temperature
test, peel strength test, plating thickness, plate weight,
high heat and humidity test, steam exposure test,
stiffness test, impact test, twist test, cantilever beam test,
gradient temperature test, and special tests
evaluating the unmolding temperature, flammability, resistance
to an elec. spark, and AcOH bath. From an overall performance
standpoint, plated II gave better performance than plated I or
III. The II was especially superior where high temperature and (or)
humidity were present. One II gave the best general performance
and will be considered for further severe applications. Other
substrates performed well enough to be considered for less critical
applications. The results were tabulated.

IT 9003-56-9, uses and miscellaneous

RL: USES (Uses)

(appliance backsplashes from coated, evaluation of)

RN 9003-56-9 HCAPLUS

CN 2-Propenenitrile, polymer with 1,3-butadiene and ethenylbenzene
(9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

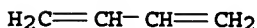
CMF C3 H3 N



CM 2

CRN 106-99-0

CMF C4 H6



CM 3

CRN 100-42-5

CMF C8 H8

$\text{H}_2\text{C}=\text{CH}-\text{Ph}$

CC 37 (Plastics Fabrication and Uses)
 IT Household furnishings
 (appliances, coated vinyl compound polymers as
 backsplashes for)
 IT 9003-07-0, uses and miscellaneous 9003-53-6, uses and
 miscellaneous 9003-56-9, uses and miscellaneous
 RL: USES (Uses)
 (appliance backsplashes from coated, evaluation of)

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